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# Kansas Timber Industry- An Assessment of Timber Product Output and Use, 1998

William H. Reading, IV and Robert L. Atchison

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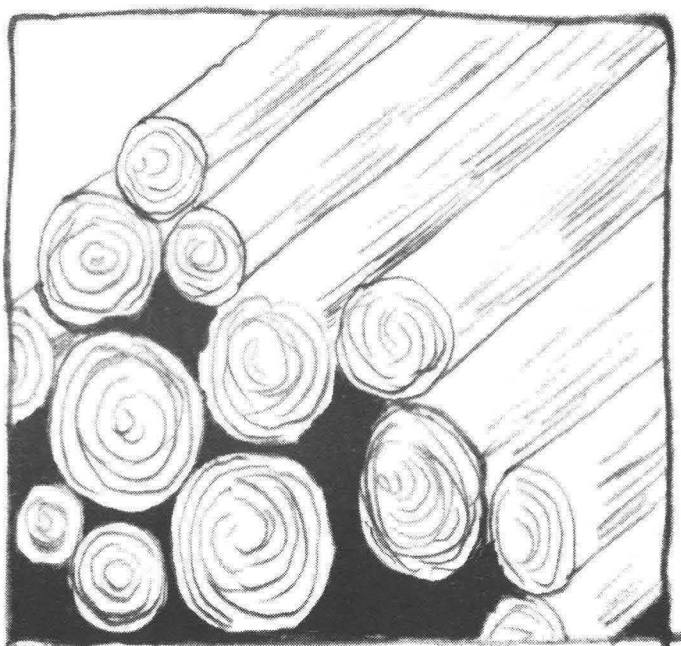

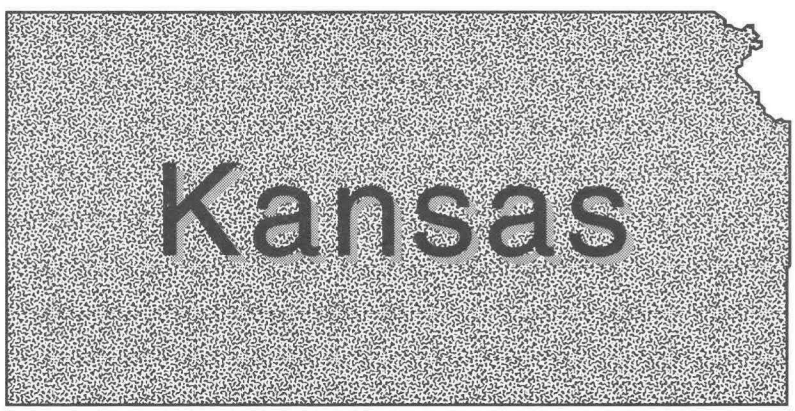

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## FOREWORD

This bulletin reports findings of a survey of all primary wood-using mills in Kansas in 1998 and details the industry's size and composition, its use of roundwood, and its generation and disposition of wood residues. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, forest industry development, and forest research.

Special thanks are given to primary wood-using firms that responded to the survey and to the Kansas Forest Service, Kansas State University, for canvassing the respondents. Their cooperation is greatly appreciated.

All volumes are reported in product-specific standard units and/or cubic feet. Volumes reported by mills in nonstandard units were converted to standard units using regional conversion factors. Reported trends and changes in the primary wood-using industry in Kansas are based on comparisons with previous surveys of the State's primary wood-using industry conducted in 1964, 1980, and 1993. Row and column data of tables may not sum due to rounding, but data in each table cell are accurately displayed.

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# Kansas Timber Industry—An Assessment of Timber Product Output and Use, 1998

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This bulletin uses a variety of terms to describe the various raw materials, harvest residues, products, and byproducts common to the timber harvesting and wood products industry. "Growing stock" refers to the portion of a live tree of a commercial species that meets minimum standards of size and quality and is merchantable for processing into products such as lumber, plywood, or pulp. A "growing-stock tree" therefore refers to a tree that contains growing stock. That portion of a growing-stock tree not considered growing stock (small limbs, cull portions, etc.) and left in the forest is referred to as "logging slash." However, if this non-growing-stock material is removed from the forest for processing, it is called "industrial roundwood." Materials classified as growing stock that are left in the forest due to harvesting inefficiencies are termed "harvest residues." Once a tree has been harvested, that portion of the tree removed from the forest for processing at a primary wood-using mill is termed "industrial roundwood." A "saw log" is a subclass of industrial roundwood that can be sawn into lumber products. These logs must therefore meet high standards of size, straightness, and overall quality. A "sawtimber tree" is a growing-stock tree that contains at least one saw log that meets minimum size and quality standards. A veneer log is another subclass of industrial roundwood that must meet even higher standards of size, straightness, and overall quality than saw logs. Veneer logs may be processed into plywood, finished panels, or veneer sheets. These terms are all defined in the glossary.

## HIGHLIGHTS

### Primary Wood-Using Industry

- The number of mills processing more than 1 million board feet per year increased from three in 1993 to five in 1998 (table 1 and fig. 1).
- The volume of industrial roundwood received by mills in Kansas was 3,476 thousand cubic feet, 61 percent higher in 1998 than in 1993 (MCF=1,000 cubic feet) (table 2).
- Kansas forest lands provided three-fourths of the roundwood received in 1998, and while Missouri and Oklahoma provided the remainder (fig. 2). While Missouri provided about the same percentage of roundwood in 1998 as in 1993, the portion coming from Oklahoma was four times higher in 1998 than in 1993.

### Industrial Roundwood Production

- In 1998 industrial roundwood production for saw logs and veneer totaled 3,244 thousand cubic feet, almost 50 percent higher than 1993 levels. Although total

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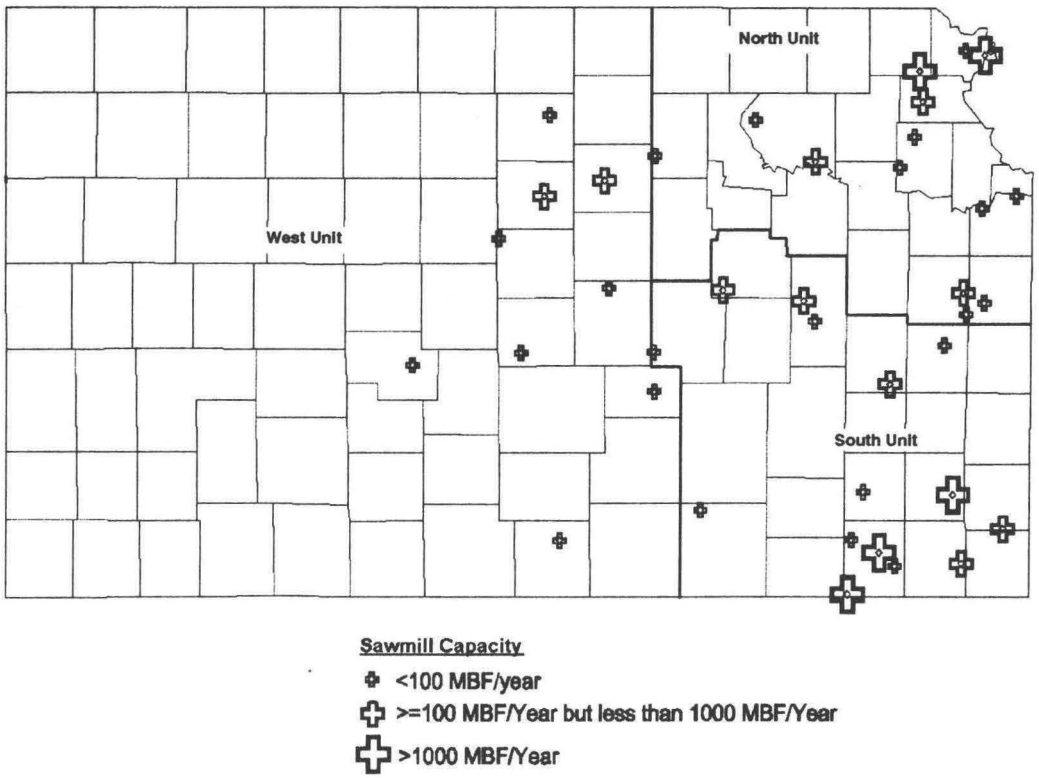


Figure 1.—*Active sawmills by Forest Survey Unit in Kansas, 1998.*

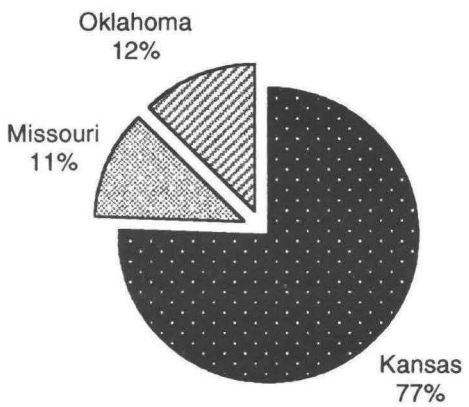


Figure 2.—*Industrial roundwood receipts by State of origin.*

production was up, the veneer log component of production was down, from 937 thousand board feet (MBF) in 1993 to 64 MBF in 1998 (table 3 and fig. 3). The low levels of overall production in 1993 were attributed to supply constrictions due to frequent rainfall and flooding.

- The relative importance of each species to the timber industry changed between surveys. In 1993, black walnut was the most important species, followed by cottonwood and white oak. But by 1998, black walnut production had dropped in rank from first to fifth. Cottonwood replaced black walnut, making up almost one-third of the industrial roundwood volume. White oak increased in rank from third to second. Another large change was in soft maple, which climbed from sixth in 1993 to third in 1998 (fig. 4).

- In 1998, 3.3 million cubic feet (table 8) of growing-stock volume were removed from Kansas forests. By comparison, the Fourth Kansas Resource Inventory (Leatherberry 1999), completed in 1994, estimated the total growing-stock volume to be 1,225 million cubic feet. The annual growth between inventories was estimated to be 29 million cubic feet—a growth to removals ratio of 8.8:1.0.

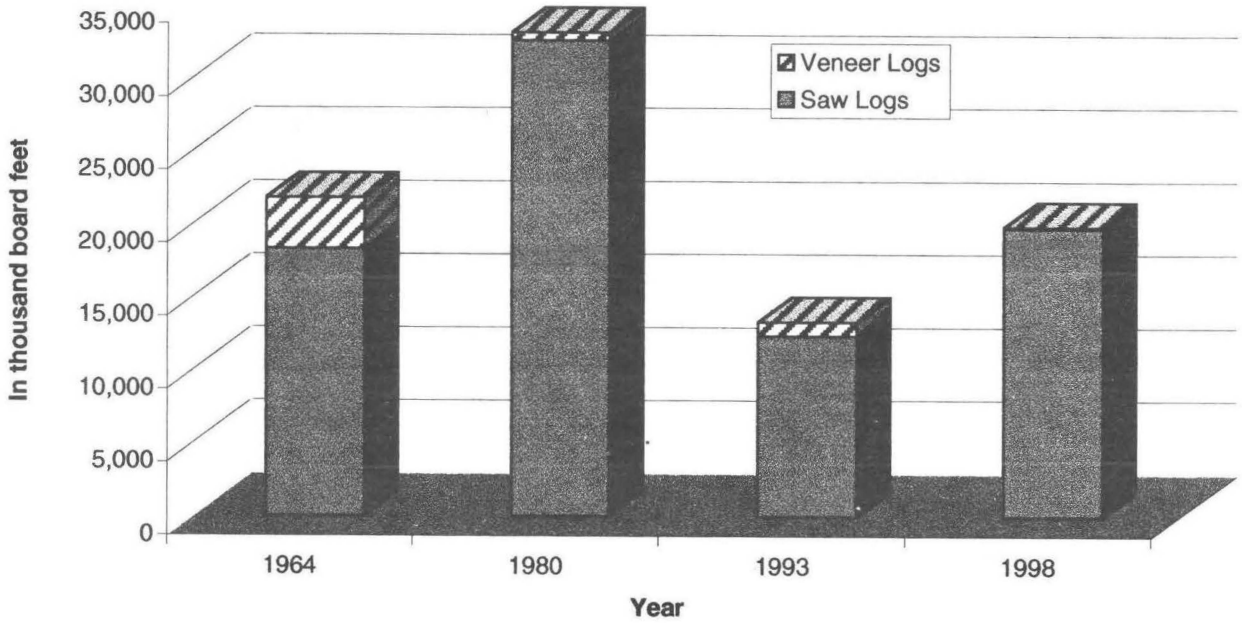


Figure 3.—*Industrial roundwood production for saw logs and veneer, Kansas, 1998.*

*Saw Log Production*

- Saw log production from Kansas forests totaled 19,819 MBF in 1998. Kansas mills processed a total of 21,716 MBF of saw logs.

- The Southeast Forest Survey Unit produced more saw logs (62 percent) than the Northeast and West units combined (fig. 5). This 1998 total is slightly less than in 1993 when the Southeast unit produced 69 percent of the harvest, but higher than in 1980 when the unit produced 53 percent of the harvest.

- Almost 40 percent of the saw log volume came from five Kansas counties: Lyon, Cherokee, Greenwood, Cowley, and Dickinson (table 5).

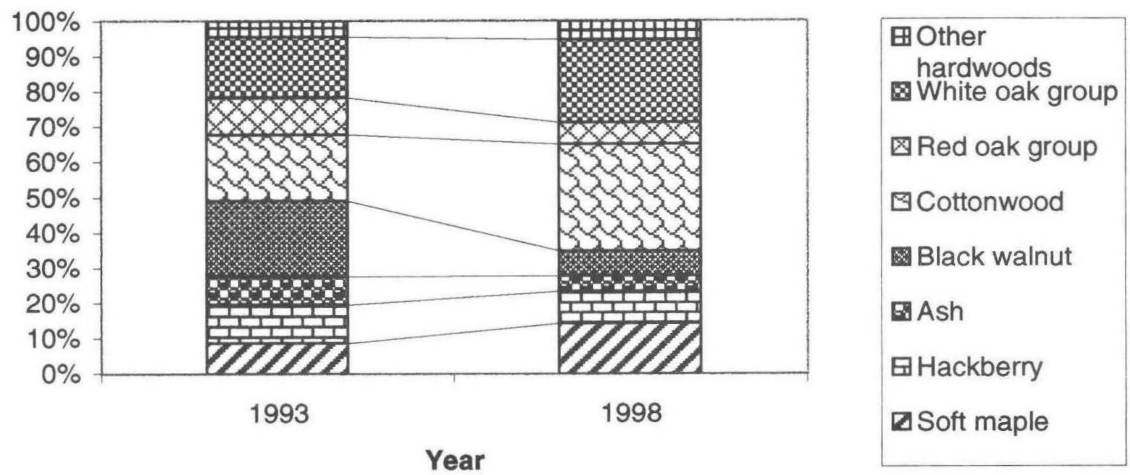


Figure 4.—*Species distribution of industrial roundwood production, Kansas, 1993 and 1998.*

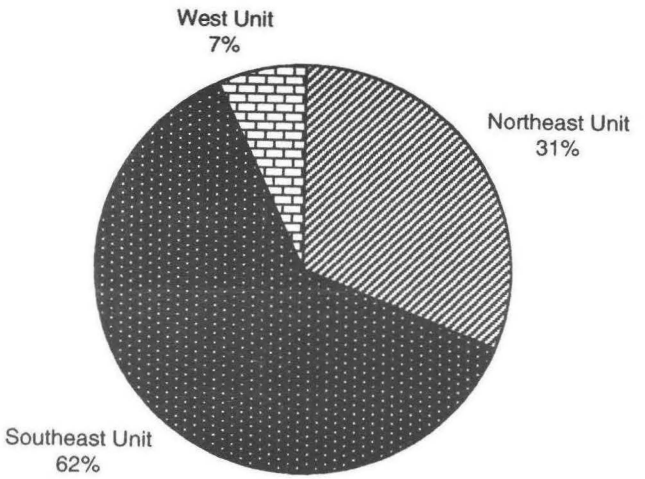


Figure 5.—*Saw log production by Forest Survey unit.*

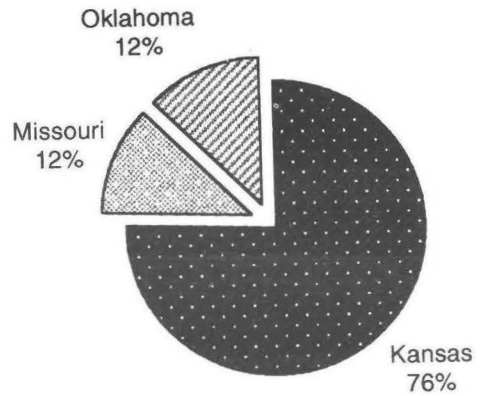


Figure 7.—*Sources of saw logs processed by Kansas mills, 1998.*

- Mills in Kansas processed the vast majority of saw logs harvested in Kansas (fig. 6).
- Missouri was the second largest market for saw logs harvested in Kansas (fig. 6).
- Of the saw logs processed by Kansas mills in 1998, 24 percent were imported from other States (fig. 7). Overall, Kansas imported 5,294 MBF and exported 3,397 MBF, for a net import of 1,897 MBF (tables 4 and 6).

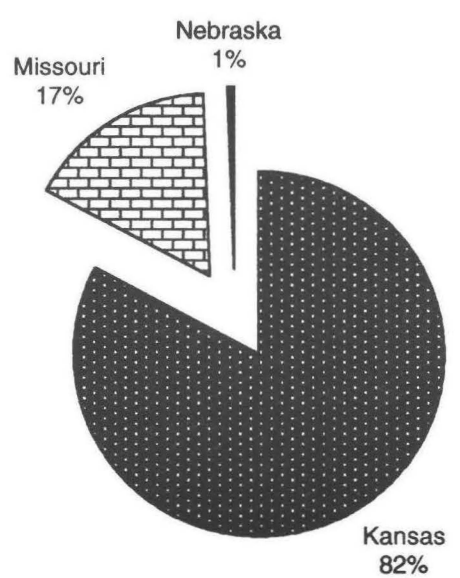


Figure 6.—*Destination of saw logs harvested in Kansas, 1998.*

*Veneer Log Production*

- Black walnut was the only species harvested for veneer in 1998. All of the veneer logs harvested were sent to out-of-State mills (table 7).
- Almost three-fourths of the black walnut harvested for veneer came from three Kansas counties: Miami, Bourbon, and Linn (table 7).

## TREE UTILIZATION

- Tree utilization efficiency measures the amount of material harvested versus the amount that is processed at a primary mill. Among species, utilization efficiency ranged from 77 percent for black walnut to 60 percent for such species as pecan, hickory, and ash (fig. 8). The average utilization efficiency rate increased from 63 percent in 1993 to 70 percent in 1998.

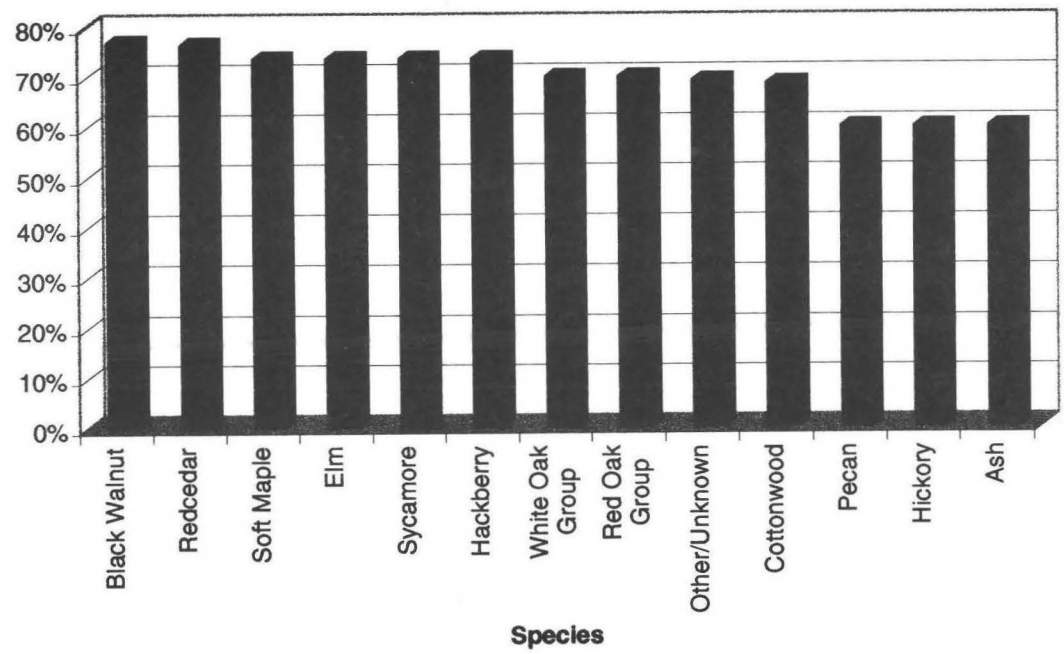


Figure 8.—*Total percentage of material harvested processed by mill.*

- In the harvesting of industrial roundwood in 1998, 4.6 million cubic feet of timber was cut. Of this amount, 3.3 million cubic feet came from growing stock and 1.3 million cubic feet came from non-growing stock. From the growing stock, 84 percent was utilized, and from the non-growing stock, 36 percent was utilized (fig. 9).

**Primary Mill Residues**

- During 1998, primary wood-using mills in the State generated approximately 29 thousand tons of coarse wood residues, 16 thousand tons of fine wood residues, and 12 thousand tons of bark (table 12 and fig. 10).

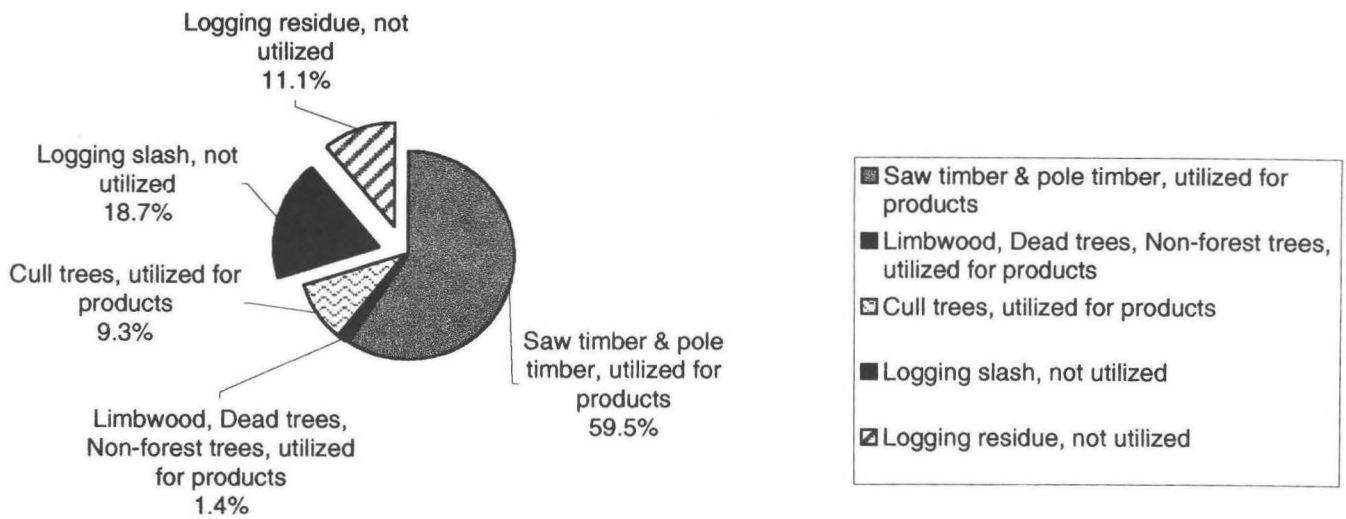
Logging residue, not utilized 11.1%
Logging slash, not utilized 18.7%
Cull trees, utilized for products 9.3%
Limbwood, Dead trees, Non-forest trees, utilized for products 1.4%
Saw timber & pole timber, utilized for products 59.5%
Saw timber & pole timber, utilized for products
Limbwood, Dead trees, Non-forest trees, utilized for products
Cull trees, utilized for products
Logging slash, not utilized
Logging residue, not utilized

Figure 9.—*Distribution of timber removals for industrial roundwood by source of material, Kansas, 1998.*

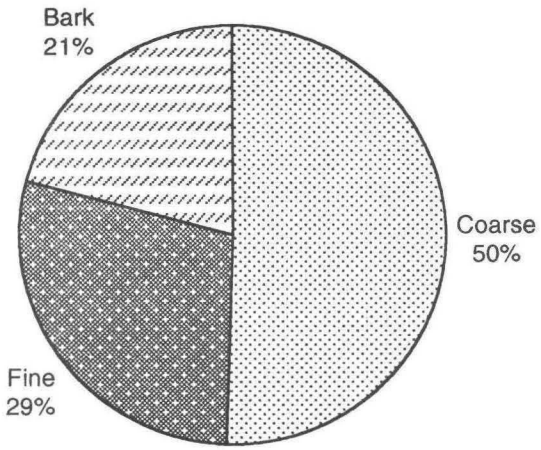


Figure 10.—*Distribution of residues generated by primary wood-using mills by type of residue, Kansas, 1998.*

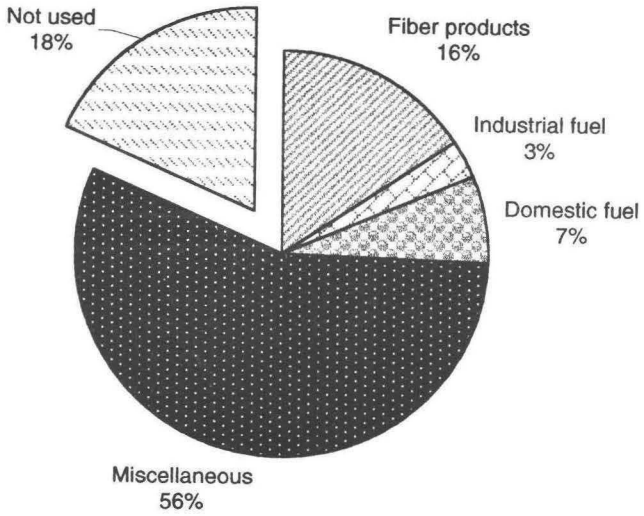


Figure 11.—*Distibution of residues generated by primary wood-using mills by method of disposal, Kansas, 1998.*

- Eighty-two percent of the residues generated at Kansas mills were utilized for byproducts (fig. 11).

- The portion of residues not used climbed from 11 percent in 1993 to 18 percent in 1998.

- Use of residues for industrial fuels fell from 17 percent in 1993 to just 3 percent in 1998. Use of residues for domestic fuels fell from 22 to 7 percent during that time.

- The "miscellaneous" disposition category doubled from 28 percent in 1993 to 56 percent in 1998. This category includes residues used for livestock bedding, mulch, small dimension lumber, and specialty items.

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Hackett, Ronald L.; Strickler, John K. 1996. **Kansas timber industry—an assessment of timber product output and use, 1993.** Resour. Bull. NC-176. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 35 p.

# APPENDIX

## STUDY METHODS

This study was a cooperative effort of the Kansas Forest Service (KFS) and the North Central Research Station (NCRS) of the USDA Forest Service. KFS used mail questionnaires supplied by NCRS that were designed to determine the size and composition of the State's primary wood-using mills, and followed up with additional mailings, telephone, and personal contacts until a 100-percent response was achieved. Completed questionnaires were sent to NCRS for editing and processing.

As part of data editing and processing, all industrial roundwood volumes reported on the questionnaires were converted to standard units of measure using regional conversion factors. Timber removals by source of material and harvest residues generated during logging were estimated from standard product volumes using factors developed from logging utilization studies previously conducted by NCRS. Finalized data on the State's industrial roundwood receipts were loaded into a regional timber removals database where they were supplemented with data on out-of-State uses of Kansas roundwood to provide a complete assessment of the State's timber product output.

## DEFINITION OF TERMS

**Board foot**.—Unit of measure applied to roundwood. It relates to lumber that is 1 foot long, 1 foot wide, and 1 inch thick (or its volume equivalent).

**Central stem**.—The portion of a tree between a 1-foot stump and the minimum 4.0-inch top diameter outside bark or the point where the central stem breaks into limbs.

**Coarse mill residue**.—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

**Commercial species**.—Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam, Osage-orange, and redbud.)

**Cull removals**.—Net volume of rough and rotten trees, plus the net volume in sections of the central stem of growing-stock trees that do not meet regional merchantability standards, harvested for industrial roundwood products.

**Dead removals**.—Net volume of dead trees harvested for industrial roundwood products.

**Diameter at breast height (d.b.h.)**.—The outside bark diameter at 4.5 feet above the forest floor on the uphill side of the tree. For determining breast height, the forest floor includes the duff layer that may be present, but does not include unincorporated woody debris that may rise above the ground line.

**Fine mill residue**.—Wood residue not suitable for chipping such as sawdust and veneer clippings.

**Forest land**.—Land at least 10 percent stocked. (Note: Historically, 16.7 percent was used based on full stocking equaling 100 percent) by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of land as forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a width of at least 120 feet, measured across the tree crowns, to qualify as forest land. Unimproved roads and trails or clearings in forest areas shall be classed as forest if less than 120 feet wide. Streams and other bodies of water shall be classed as forest if less than 30 feet wide.

**Growing-stock removals**.—The growing-stock volume removed from the timberland inventory by harvesting industrial roundwood products. (Note: Includes sawtimber removals, poletimber removals, and logging residues.)

**Growing-stock tree**.—A live timberland tree of commercial species that contains at least one 12-foot saw log or two 8-foot saw logs meeting minimum log/tree grade requirements, now or prospectively, and that meets

specified standards of size, quality, and merchantability. At least one-third of the gross board-foot volume must be merchantable material and at least 50 percent sound at any point. (Note: Excludes rough, rotten, and dead trees.)

**Growing-stock volume**.—Net volume of growing-stock trees 5.0 inches d.b.h. and over, from 1 foot above the ground to a minimum 4.0-inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

**Hardwoods**.—Dicotyledonous trees, usually broad-leaved and deciduous.

**Harvest residues**.—The total net volume of unused portions of trees cut or killed by logging. (Note: Includes both logging residues and logging slash.)

**Industrial roundwood production**.—The quantity of industrial roundwood harvested in a geographic area.

**Industrial roundwood products**.—Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for fuel, pulp, or board products.

**Industrial roundwood receipts**.—The quantity of industrial roundwood received by commercial mills in a geographic area.

**International 1/4-inch rule**.—A log rule or formula for estimating the board-foot volume of logs, allowing 1/2-inch of taper for each 4-foot length. The rule appears in a number of forms that allow for kerf. In this form, 1/4-inch of kerf is assumed. This rule is used as the USDA Forest Service standard log rule in the Eastern United States.

**Limbwood removals**.—Net volume of all portions of a tree other than the central stem, (including forks, large limbs, tops, and stumps) harvested for industrial roundwood products.

**Logging residue**.—Net volume of unused portions of the merchantable central stem of growing-stock trees cut or killed by logging.

**Logging slash**.—Net volume of unused portions of the unmerchantable (non-growing-stock) sections of trees cut or killed by logging.

**Merchantable sections**.—Sections of the central stem of growing-stock trees that meet either pulpwood or saw log specifications.

**Net volume**.—Gross volume less deductions for rot, sweep, or other defects affecting use for roundwood products.

**Noncommercial species**.—Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial roundwood products. Classified in volume tables as rough trees.

**Nonforest land**.—Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 39.9-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, improved roads and nonforest strips must be more than 120 feet wide and more than 1 acre to qualify as nonforest land.)

**Nonforest land removals**.—Net volume of trees on nonforest lands harvested for industrial roundwood products.

**Poletimber**.—A growing-stock tree at least 5.0 inches d.b.h. but smaller than sawtimber size (9.0 inches d.b.h. for softwoods, 11.0 inches d.b.h. for hardwoods).

**Poletimber removals**.—Net volume in the merchantable central stem of poletimber trees harvested for industrial roundwood products.

**Primary wood-using mills**.—Mills receiving roundwood or chips from roundwood for processing into products.

**Primary wood-using mill residue**.—Wood materials (coarse and fine) and bark generated at manufacturing plants from roundwood processed into principal products. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some byproduct.

**Rotten tree**.—A tree that does not meet regional merchantability standards because of excessive unsound cull.

**Rough tree**.—A tree that does not meet regional merchantability standards because of excessive sound cull. Includes noncommercial tree species.

**Roundwood**.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

**Sapling**.—A live tree between 1.0 and 5.0 inches d.b.h.

**Sapling removals**.—Net volume in saplings harvested for industrial roundwood products.

**Saw log**.—A log meeting minimum standards of diameter, length and defect, sound and straight, and with a minimum diameter outside bark of 7 inches for softwoods and 9 inches for hardwoods, or other combinations of size and defect specified by regional standards.

**Saw log portion**.—That portion of the central stem of sawtimber trees between the stump and the saw log top.

**Saw log top**.—The point on the central stem of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7.0 inches diameter outside bark (d.o.b.) for softwoods and 9.0 inches d.o.b. for hardwoods.

**Sawtimber removals**.—As used in table 8, sawtimber removals refers to the net volume in the merchantable central stem of sawtimber trees harvested for industrial roundwood products. (Note: Includes the saw log and upper stem portions of sawtimber trees.) In the case of sawtimber volume removed from timberland inventory as in table 11, sawtimber removals refers to the net volume in the saw log portion of sawtimber trees harvested for roundwood products or left on the ground as harvest residue, and is usually expressed in thousands of board feet (International 1/4-inch rule).

**Sawtimber tree**.—A growing-stock tree containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9.0 inches d.b.h. and hardwoods must be at least 11.0 inches d.b.h.

**Softwoods**.—Coniferous trees, usually evergreen, having needles or scale-like leaves.

**Timberland**.—Forest land that is capable of producing in excess of 20 cubic feet per acre per year of industrial roundwood products under natural conditions, is not withdrawn from timber utilization by statute or administrative regulation, and is not associated with urban or rural development.

**Timber product output**.—The volume of roundwood products produced from an area's forests.

**Timber removals**.—The total net volume of trees removed for industrial roundwood products or left on the ground as harvest residues.

**Tree**.—A woody plant usually having one or more perennial stems, a more or less definitely formed crown of foliage, and a height of at least 12 feet at maturity.

**Upper stem portion**.—That portion of the central stem of sawtimber trees between the saw log top and the minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

**Veneer log**.—Log to be used in the production of plywood, finished panels, or veneer sheets, both rotary cut and sliced.

**TREE SPECIES GROUPS IN KANSAS (LITTLE 1981)**

Note: Many additional tree species have been planted around homes, farm buildings, and in towns and cities. However, only those species encountered during the 1994 inventory of the forest resources of Kansas are listed here.

**Softwoods**

Eastern redcedar[1] ..... *Juniperus virginiana*

**Hardwoods**

Boxelder[1] ..... *Acer negundo*
Silver maple[1] ..... *A. saccharinum*
Sugar maple[2] ..... *A. saccharum*
River birch[1] ..... *Betula nigra*
Select hickories[2]
- Pecan ..... *Carya illinoensis*
- Shellbark hickory ..... *C. laciniosa*
- Shagbark hickory ..... *C. ovata*
- Mockernut hickory ..... *C. tomentosa*

Other hickories[2]
- Bitternut hickory ..... *C. cordiformis*
- Black hickory ..... *C. texana*

Sugarberry[1] ..... *Celtis laevigata*
Hackberry[1] ..... *C. occidentalis*
Ashes[2]
- White ash ..... *Fraxinus americana*
- Green ash ..... *F. pennsylvanica*

Kentucky coffeetree[1] ..... *Gymnocladus dioicus*
Black walnut[2] ..... *Juglans nigra*
Sycamore[1] ..... *Platanus occidentalis*
Eastern cottonwood[1] ..... *Populus deltoides*
Black cherry[1] ..... *Prunus serotina*
Select white oaks[2]
- White oak ..... *Quercus alba*
- Bur oak ..... *Q. macrocarpa*
- Chinkapin oak ..... *Q. muehlenbergii*

Other white oaks[2]
- Post oak ..... *Q. stellata*

Select red oaks[2]
- Northern red oak ..... *Q. rubra*
- Shumard oak ..... *Q. shumardii*

Other red oaks[2]
- Blackjack oak ..... *Q. marilandica*
- Shingle oak ..... *Q. imbricaria*
- Pin oak ..... *Q. palustris*
- Black oak ..... *Q. velutina*

American basswood[1] ..... *Tilia americana*
Black willow[1] ..... *Salix nigra*
Elm
- American elm[1] ..... *Ulmus americana*
- Siberian elm[1] ..... *U. pumila*
- Slippery elm[1] ..... *U. rubra*

Other hardwoods
- Buckeye[1] ..... *Aesculus* spp.
- Northern catalpa[1] ..... *Catalpa speciosa*
- Persimmon[2] ..... *Diospyros virginiana*
- Honeylocust[2] ..... *Gleditsia triacanthos*
- White mulberry[1] ..... *Morus alba*
- Red mulberry[1] ..... *M. rubra*
- Black locust[2] ..... *Robinia pseudoacacia*
- Sassafras[1] ..... *Sassafras albidum*

Noncommercial species
- Ailanthus ..... *Ailanthus altissima*
- Eastern redbud ..... *Cercis canadensis*
- Hawthorn ..... *Crataegus* spp.
- Osage-orange ..... *Maclura pomifera*
- Apple ..... *Malus* spp.
- Eastern hophornbeam ..... *Ostrya virginiana*
- Wild plum ..... *Prunus* spp.
- Soapberry ..... *Saponaria*

**TABLE TITLES**

Table 1.— Number of active primary wood-using mills, Kansas, 1980, 1993, and 1998

Table 2.—Industrial roundwood receipts by species group and State of origin, Kansas, 1998

Table 3.—Industrial roundwood production by species group, Forest Survey Unit, and type of product, Kansas, 1998

Table 4.—Saw log production by Forest Survey Unit, species group, and State of destination, Kansas, 1998

Table 5.—Saw log production from roundwood by Forest Survey Unit, county, and species group, Kansas, 1998

Table 6.—Saw log receipts by Forest Survey Unit, species group, and State of origin, Kansas, 1998

Table 7.—Veneer log production by forest Survey Unit, county, and species group, Kansas, 1998

Table 8.—Wood material harvested for industial roundwood by source of material and species group, Kansas, 1998

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[1] *This species or species group is considered a soft hardwood, with an average specific gravity of less than 0.50.*

[2] *This species or species group is considered a hard hardwood, with an average specific gravity greater than or equal to 0.50.*

Table 9.—Harvest residues generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Kansas, 1998

Table 10.—Growing-stock removals for industrial roundwood, by Forest Survey Unit, county, and species group, Kansas, 1998

Table 11.—Sawtimber removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, Kansas, 1998

Table 12.—Residues produced at primary wood-using mills by Forest Survey Unit, type of use, and type of material, Kansas, 1998

Table 1.--Number of active primary wood-using mills, Kansas, 1980, 1993, and 1998

| Kind of mill | 1980 | 1993 | 1998 |
|---|---|---|---|
| Sawmills | | | |
| 1,000 mbf+[1] | 11 | 3 | 5 |
| Less than 1,000 mbf [1] | 48 | 33 | 34 |
| Total | 59 | 36 | 39 |

[1] Thousand board feet, International 1/4-inch rule.

Table 2.--Industrial roundwood receipts by species group and State of origin, Kansas, 1998

*(Thousand cubic feet)*

| Species | Total | Kansas | Missouri | Oklahoma |
|---|---|---|---|---|
| **SOFTWOODS** | | | | |
| Redcedar | 13 | 13 | -- | -- |
| Ponderosa pine | 1 | 1 | -- | -- |
| Total | 15 | 15 | -- | -- |
| **HARDWOODS** | | | | |
| Soft maple | 478 | 420 | 24 | 34 |
| Hard maple | 1 | 1 | -- | -- |
| Hickory | 4 | 4 | -- | -- |
| Pecan | 35 | 30 | 3 | 3 |
| Hackberry | 318 | 288 | 10 | 19 |
| Ash | 131 | 113 | 9 | 8 |
| Black walnut | 90 | 79 | 7 | 5 |
| Osage-orange | 3 | 3 | -- | -- |
| Sycamore | 191 | 115 | 51 | 24 |
| Cottonwood | 1,438 | 917 | 250 | 272 |
| Black cherry | 0 | 0 | -- | -- |
| Red oak group | 127 | 113 | 8 | 7 |
| White oak group | 548 | 489 | 31 | 28 |
| Black locust | 0 | 0 | -- | -- |
| Willow | 1 | 1 | -- | -- |
| American basswood | 1 | 1 | -- | -- |
| Elm | 96 | 70 | 2 | 25 |
| Other hardwoods | 1 | 1 | -- | -- |
| Total | 3,462 | 2,644 | 393 | 425 |
| All species | 3,476 | 2,659 | 393 | 425 |

Rows and columns may not sum due to rounding.

Table 3.--Industrial roundwood production by species group, Forest Survey Unit, and type of product, Kansas, 1998 [1]

**All Units**

| Species group | Saw logs | | Veneer logs | | Other products | All products |
|---|---|---|---|---|---|---|
| | MBF [2] | MCF [3] | MBF [2] | MCF [3] | MBF [2] | MCF [3] |
| **SOFTWOODS** | | | | | | |
| Redcedar | 61 | 13 | -- | -- | 1 | 14 |
| Ponderosa pine | 8 | 1 | -- | -- | -- | 1 |
| Total | 70 | 15 | -- | -- | 1 | 16 |
| **HARDWOODS** | | | | | | |
| Soft maple | 2,788 | 443 | -- | -- | 1 | 444 |
| Hard maple | 3 | 1 | -- | -- | -- | 1 |
| Hickory | 98 | 17 | -- | -- | -- | 17 |
| Pecan | 177 | 30 | -- | -- | -- | 30 |
| Hackberry | 1,814 | 288 | -- | -- | -- | 288 |
| Ash | 783 | 134 | -- | -- | -- | 134 |
| Black walnut | 1,440 | 220 | 64 | 9 | -- | 229 |
| Osage-orange | 18 | 3 | -- | -- | -- | 3 |
| Sycamore | 775 | 123 | -- | -- | -- | 123 |
| Cottonwood | 6,142 | 948 | -- | -- | 1 | 949 |
| Black cherry | 3 | 0 | -- | -- | -- | 0 |
| Red oak group | 1,092 | 195 | -- | -- | -- | 195 |
| White oak group | 4,148 | 740 | -- | -- | -- | 740 |
| Black locust | 1 | 0 | -- | -- | -- | 0 |
| Willow | 5 | 1 | -- | -- | -- | 1 |
| Basswood | 23 | 4 | -- | -- | 1 | 5 |
| Elm | 438 | 70 | -- | -- | -- | 70 |
| Other hardwoods | 2 | 0 | -- | -- | -- | 0 |
| Total | 19,749 | 3,217 | 64 | 9 | 3 | 3,229.00 |
| All species | 19,819 | 3,231 | 64 | 9 | 4 | 3,244.00 |

**Northeast Unit**

| Species group | Saw logs | | Veneer logs | | Other products | All products |
|---|---|---|---|---|---|---|
| | MBF [2] | MCF [3] | MBF [2] | MCF [3] | MBF [2] | MCF [3] |
| **SOFTWOODS** | | | | | | |
| Redcedar | 19 | 4 | -- | -- | 1 | 5 |
| Ponderosa pine | 7 | 1 | -- | -- | -- | 1 |
| Total | 26 | 5 | -- | -- | 1 | 6 |
| **HARDWOODS** | | | | | | |
| Soft maple | 1,060 | 168 | -- | -- | 1 | 169 |
| Hard maple | 3 | 0 | -- | -- | -- | 0 |
| Hickory | 46 | 8 | -- | -- | -- | 8 |
| Pecan | 49 | 8 | -- | -- | -- | 8 |
| Hackberry | 387 | 61 | -- | -- | -- | 61 |
| Ash | 256 | 44 | -- | -- | -- | 44 |
| Black walnut | 514 | 79 | 19 | 3 | -- | 81 |
| Osage-orange | 9 | 2 | -- | -- | -- | 2 |
| Sycamore | 182 | 29 | -- | -- | -- | 29 |
| Cottonwood | 1,983 | 306 | -- | -- | 1 | 307 |
| Black cherry | 3 | 0 | -- | -- | -- | 0 |
| Red oak group | 629 | 112 | -- | -- | -- | 112 |
| White oak group | 1,494 | 267 | -- | -- | -- | 267 |
| Willow | 1 | 0 | -- | -- | -- | 0 |
| Basswood | 22 | 4 | -- | -- | 1 | 5 |
| Elm | 32 | 5 | -- | -- | -- | 5 |
| Total | 6,670 | 1,094 | 19 | 3 | 3 | 1,099 |
| All species | 6,695 | 1,099 | 19 | 3 | 4 | 1,106 |

(Table 3 continued)

**Southeast Unit**

| Species group | Saw logs | | Veneer logs | | Other products | All products |
|---|---|---|---|---|---|---|
| | MBF [2] | MCF [3] | MBF [2] | MCF [3] | MBF [2] | MCF [3] |
| **SOFTWOODS** | | | | | | |
| Redcedar | 17 | 4 | -- | -- | -- | 4 |
| Total | 17 | 4 | -- | -- | -- | 4 |
| **HARDWOODS** | | | | | | |
| Soft maple | 1,561 | 248 | -- | -- | -- | 248 |
| Hard maple | 1 | 0 | -- | -- | -- | 0 |
| Hickory | 52 | 9 | -- | -- | -- | 9 |
| Pecan | 109 | 19 | -- | -- | -- | 19 |
| Hackberry | 1,291 | 205 | -- | -- | -- | 205 |
| Ash | 434 | 74 | -- | -- | -- | 74 |
| Black walnut | 812 | 124 | 45 | 6 | -- | 131 |
| Osage-orange | 5 | 1 | -- | -- | -- | 1 |
| Sycamore | 567 | 90 | -- | -- | -- | 90 |
| Cottonwood | 4,049 | 625 | -- | -- | -- | 625 |
| Black cherry | 414 | 74 | -- | -- | -- | 74 |
| Red oak group | 2,265 | 404 | -- | -- | -- | 404 |
| White oak group | 4 | 1 | -- | -- | -- | 1 |
| Willow | 1 | 0 | -- | -- | -- | 0 |
| Basswood | 388 | 62 | -- | -- | -- | 62 |
| Elm | 1 | 0 | -- | -- | -- | 0 |
| Total | 11,953 | 1,935 | 45 | 6 | -- | 1,942 |
| All species | 11,970 | 1,939 | 45 | 6 | -- | 1,945 |

**West Unit**

| Species group | Saw logs | | Veneer logs | | Other Products | All Products |
|---|---|---|---|---|---|---|
| | MBF [2] | MCF [3] | MBF [2] | MCF [3] | MBF [2] | MCF [3] |
| **SOFTWOODS** | | | | | | |
| Redcedar | 26 | 6 | -- | -- | -- | 6 |
| Ponderosa pine | 2 | 0 | | | | 0 |
| Total | 27 | 6 | -- | -- | -- | 6 |
| **HARDWOODS** | | | | | | |
| Soft maple | 167 | 26 | -- | -- | -- | 26 |
| Pecan | 18 | 3 | -- | -- | -- | 3 |
| Hackberry | 136 | 22 | -- | -- | -- | 22 |
| Ash | 93 | 16 | -- | -- | -- | 16 |
| Black walnut | 115 | 18 | -- | -- | -- | 18 |
| Osage-orange | 4 | 1 | -- | -- | -- | 1 |
| Sycamore | 100 | 4 | -- | -- | -- | 4 |
| Cottonwood | 106 | 17 | -- | -- | -- | 17 |
| Red oak group | 112 | 9 | -- | -- | -- | 9 |
| White oak group | 118 | 69 | -- | -- | -- | 69 |
| Black locust | 124 | 0 | -- | -- | -- | 0 |
| Elm | 130 | 3 | -- | -- | -- | 3 |
| Other hardwoods | 136 | 0 | -- | -- | -- | 0 |
| Total | 1127 | 188 | -- | -- | -- | 188 |
| All species | 1154 | 194 | -- | -- | -- | 194 |

[1] Based on utiization studies in the region.
[2] Thousand board feet, International 1/4-inch rule.
[3] Thousand cubic feet.
Value of "0" indicates value greater than 0 but less than 500.
Rows and columns may not sum due to rounding.

Table 4.--Saw log production by Forest Survey Unit, species group, and State of destination, Kansas, 1998

(*Thousand board feet* [1])

**All Units**

| Species group | Total | Destination | | |
|---|---|---|---|---|
| | | Kansas | Missouri | Nebraska |
| **SOFTWOODS** | | | | |
| Redcedar | 61 | 61 | -- | -- |
| Ponderosa pine | 8 | 8 | -- | -- |
| Total | 70 | 70 | -- | -- |
| **HARDWOODS** | | | | |
| Soft maple | 2,788 | 2,647 | 140 | -- |
| Hard maple | 3 | 3 | -- | -- |
| Hickory | 98 | 22 | 76 | -- |
| Pecan | 177 | 177 | -- | -- |
| Hackberry | 1,814 | 1,814 | -- | -- |
| Ash | 783 | 664 | 119 | -- |
| Black walnut | 1,440 | 513 | 927 | -- |
| Osage-orange | 18 | 18 | -- | -- |
| Sycamore | 775 | 727 | 48 | -- |
| Cottonwood | 6,142 | 5,942 | 131 | 69 |
| Black cherry | 3 | 3 | -- | -- |
| Red oak group | 1,092 | 632 | 432 | 28 |
| White oak group | 4,148 | 2,737 | 1,383 | 28 |
| Black locust | 1 | 1 | -- | -- |
| Willow | 5 | 5 | -- | -- |
| Basswood | 23 | 6 | 17 | -- |
| Elm | 438 | 438 | -- | -- |
| Other hardwoods | 2 | 2 | -- | -- |
| Total | 19,749 | 16,352 | 3,273 | 124 |
| All species | 19,819 | 16,422 | 3,273 | 124 |

**Northeast Unit**

| Species group | Total | Destination | | |
|---|---|---|---|---|
| | | Kansas | Missouri | Nebraska |
| **SOFTWOODS** | | | | |
| Redcedar | 19 | 19 | -- | -- |
| Ponderosa pine | 7 | 7 | -- | -- |
| Total | 26 | 26 | -- | -- |
| **HARDWOODS** | | | | |
| Soft maple | 1,060 | 1,043 | 17 | -- |
| Hard maple | 3 | 3 | -- | -- |
| Hickory | 46 | 10 | 37 | -- |
| Pecan | 49 | 49 | -- | -- |
| Hackberry | 387 | 387 | -- | -- |
| Ash | 256 | 246 | 10 | -- |
| Black walnut | 514 | 189 | 324 | -- |
| Osage-orange | 9 | 9 | -- | -- |
| Sycamore | 182 | 182 | -- | -- |
| Cottonwood | 1,983 | 1,903 | 11 | 69 |
| Black cherry | 3 | 3 | -- | -- |
| Red oak group | 629 | 214 | 388 | 28 |
| White oak group | 1,494 | 789 | 678 | 28 |
| Willow | 1 | 1 | -- | -- |
| Basswood | 22 | 6 | 17 | -- |
| Elm | 32 | 32 | -- | -- |
| Total | 6,670 | 5,065 | 1,480 | 124 |
| All species | 6,695 | 5,091 | 1,480 | 124 |

(Table 4 continued)

**Southeast Unit**

| Species group | Total | Destination | | |
|---|---|---|---|---|
| | | Kansas | Missouri | Nebraska |
| **SOFTWOODS** | | | | |
| Redcedar | 17 | 17 | -- | -- |
| Total | 17 | 17 | -- | -- |
| **HARDWOODS** | | | | |
| Soft maple | 1,561 | 1,438 | 124 | -- |
| Hard maple | 1 | 1 | -- | -- |
| Hickory | 52 | 12 | 40 | -- |
| Pecan | 109 | 109 | -- | -- |
| Hackberry | 1,291 | 1,291 | -- | -- |
| Ash | 434 | 325 | 110 | -- |
| Black walnut | 812 | 209 | 603 | -- |
| Osage-orange | 5 | 5 | -- | -- |
| Sycamore | 567 | 519 | 48 | -- |
| Cottonwood | 4,049 | 3,929 | 120 | -- |
| Red oak group | 414 | 370 | 45 | -- |
| White oak group | 2,265 | 1,560 | 705 | -- |
| Willow | 4 | 4 | -- | -- |
| Basswood | 1 | 1 | -- | -- |
| Elm | 388 | 388 | -- | -- |
| Other hardwoods | 1 | 1 | -- | -- |
| Total | 11,953 | 10,160 | 1,793 | -- |
| All species | 11,970 | 10,177 | 1,793 | -- |

**West Unit**

| Species group | Total | Destination | | |
|---|---|---|---|---|
| | | Kansas | Missouri | Nebraska |
| **SOFTWOODS** | | | | |
| Redcedar | 26 | 26 | -- | -- |
| Ponderosa pine | 2 | 2 | -- | -- |
| Total | 27 | 27 | -- | -- |
| **HARDWOODS** | | | | |
| Soft maple | 167 | 167 | -- | -- |
| Pecan | 18 | 18 | -- | -- |
| Hackberry | 136 | 136 | -- | -- |
| Ash | 93 | 93 | -- | -- |
| Black walnut | 115 | 115 | -- | -- |
| Osage-orange | 4 | 4 | -- | -- |
| Sycamore | 26 | 26 | -- | -- |
| Cottonwood | 110 | 110 | -- | -- |
| Red oak group | 48 | 48 | -- | -- |
| White oak group | 389 | 389 | -- | -- |
| Black locust | 1 | 1 | -- | -- |
| Elm | 18 | 18 | -- | -- |
| Other hardwoods | 1 | 1 | -- | -- |
| Total | 1,127 | 1,127 | -- | -- |
| All species | 1,154 | 1,154 | -- | -- |

[1] International 1/4-inch rule.
Rows and columns may not sum due to rounding.

Table 5. --Saw log production from roundwood by Forest Survey Unit, county, and species group, Kansas, 1998
*(Thousand board feet [1])*

| Forest Survey Unit and county | Red-cedar | Ponderosa pine | Total softwoods | Soft maple | Hard maple | Hickory | Pecan | Hack-berry | Ash | Black-walnut | Osage-orange | Sycamore | Cotton-wood | Black cherry | Red oak group | White oak group | Black locust | Willow | Bass-wood | Elm | Other hwds. | Total hwds. | All species |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTHEAST** | | | | | | | | | | | | | | | | | | | | | | | |
| Atchison | -- | -- | -- | 69 | -- | -- | -- | -- | 14 | 14 | -- | 14 | 858 | -- | 4 | 186 | -- | -- | -- | -- | -- | 1,159 | 1,159 |
| Brown | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 173 | -- | 14 | 14 | -- | -- | -- | -- | -- | 200 | 200 |
| Clay | 1 | -- | 1 | 27 | -- | -- | 4 | 11 | 11 | 23 | 1 | 4 | 5 | -- | 8 | 30 | -- | -- | -- | 2 | -- | 127 | 128 |
| Dickinson | -- | -- | -- | 44 | -- | 11 | 3 | 24 | 10 | 172 | -- | 4 | 15 | -- | 339 | 716 | -- | -- | 17 | 2 | -- | 1,357 | 1,357 |
| Doniphan | -- | 7 | 7 | -- | 3 | 4 | -- | -- | -- | 2 | 1 | 14 | 28 | 3 | 33 | 1 | -- | -- | -- | -- | -- | 88 | 95 |
| Douglas | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Franklin | 9 | -- | 9 | 587 | -- | 6 | 6 | 158 | 73 | 49 | 5 | 16 | 22 | -- | 59 | 116 | -- | 1 | 6 | 4 | -- | 1,108 | 1,117 |
| Geary | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Jefferson | -- | -- | -- | 27 | -- | -- | 3 | 13 | 10 | 6 | -- | 39 | 96 | -- | 8 | 52 | -- | -- | -- | 2 | -- | 257 | 257 |
| Johnson | 2 | -- | 2 | 27 | -- | -- | 3 | 10 | 13 | 17 | -- | 7 | 7 | -- | 12 | 43 | -- | -- | -- | 5 | -- | 145 | 147 |
| Leavenworth | -- | -- | -- | 27 | -- | 0 | 3 | 10 | 10 | 6 | -- | 18 | 87 | -- | 8 | 35 | -- | -- | -- | 2 | -- | 206 | 206 |
| Miami | -- | -- | -- | 29 | -- | 26 | 3 | 10 | 20 | 165 | -- | 4 | 4 | -- | 65 | 42 | -- | -- | 0 | 2 | -- | 370 | 370 |
| Nemaha | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 35 | -- | 14 | 14 | -- | -- | -- | -- | -- | 62 | 62 |
| Osage | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 7 | -- | 4 | 5 | -- | 8 | 27 | -- | -- | -- | 2 | -- | 103 | 103 |
| Pottawatomie | 5 | -- | 5 | 30 | -- | -- | 3 | 11 | 10 | 13 | 1 | 4 | 211 | -- | 8 | 57 | -- | -- | -- | 3 | -- | 350 | 355 |
| Riley | 2 | -- | 2 | 27 | -- | -- | 3 | 79 | 24 | 8 | -- | 4 | 4 | -- | 8 | 28 | -- | -- | -- | 2 | -- | 187 | 189 |
| Shawnee | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 32 | 418 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 543 | 543 |
| Wabaunsee | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Wyandotte | 1 | -- | 1 | 27 | -- | -- | 3 | 10 | 10 | 8 | -- | 4 | 4 | -- | 8 | 28 | -- | -- | -- | 2 | -- | 104 | 105 |
| Total | 19 | 7 | 26 | 1,060 | 3 | 46 | 49 | 378 | 256 | 514 | 9 | 182 | 1,983 | 3 | 629 | 1,494 | -- | 1 | 22 | 32 | -- | 6,670 | 6,695 |
| **SOUTHEAST** | | | | | | | | | | | | | | | | | | | | | | | |
| Allen | 0 | -- | 0 | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Anderson | 3 | -- | 3 | 29 | 1 | 1 | 3 | 11 | 11 | 7 | -- | 6 | 4 | 0 | 9 | 30 | -- | -- | 1 | 3 | 1 | 115 | 118 |
| Bourbon | -- | -- | -- | 39 | -- | 16 | 3 | 10 | 10 | 134 | -- | 5 | 4 | -- | 13 | 71 | -- | -- | -- | 2 | -- | 307 | 307 |
| Butler | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 9 | -- | 4 | 55 | -- | 8 | 30 | -- | -- | -- | 2 | -- | 159 | 159 |
| Chase | -- | -- | -- | 27 | -- | -- | 3 | 38 | 38 | 6 | -- | 4 | 4 | -- | 8 | 81 | -- | -- | -- | 2 | -- | 184 | 184 |
| Chautauqua | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Cherokee | 1 | -- | 1 | 144 | -- | 3 | 6 | 16 | 16 | 340 | -- | 47 | 210 | -- | 14 | 695 | -- | -- | -- | 17 | -- | 1,602 | 1,604 |
| Coffey | 1 | -- | 1 | 165 | -- | -- | 3 | 51 | 51 | 7 | -- | 4 | 73 | -- | 22 | 56 | -- | -- | -- | 2 | -- | 423 | 424 |
| Cowley | -- | -- | -- | 110 | -- | -- | 3 | 93 | 93 | 6 | -- | 73 | 843 | -- | 8 | 164 | -- | -- | -- | 98 | -- | 1,409 | 1,409 |
| Crawford | 1 | -- | 1 | 27 | -- | 3 | 4 | 29 | 29 | 14 | -- | 46 | 47 | -- | 20 | 32 | -- | -- | -- | 16 | -- | 248 | 250 |
| Elk | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Greenwood | -- | -- | -- | 96 | -- | -- | 3 | 85 | 85 | 6 | -- | 101 | 970 | -- | 8 | 137 | -- | -- | -- | 109 | -- | 1,525 | 1,525 |
| Labette | 3 | -- | 3 | 31 | -- | 6 | 7 | 43 | 43 | 25 | -- | 8 | 25 | -- | 32 | 40 | -- | 4 | -- | 17 | -- | 265 | 568 |
| Linn | 4 | -- | 4 | 40 | -- | 23 | 4 | 10 | 10 | 156 | -- | 11 | 4 | -- | 49 | 27 | -- | -- | -- | 2 | -- | 346 | 350 |
| Lyon | -- | -- | -- | 165 | -- | -- | 3 | 154 | 154 | 28 | -- | 115 | 937 | -- | 8 | 357 | -- | -- | -- | 57 | -- | 1,834 | 1,834 |
| Marion | 1 | -- | 1 | 27 | -- | -- | 3 | 10 | 10 | 7 | -- | 4 | 5 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 103 | 104 |
| Montgomery | 3 | -- | 3 | 359 | -- | -- | 36 | 291 | 291 | 7 | -- | 62 | 4 | -- | 151 | 238 | -- | -- | -- | 29 | -- | 1,229 | 1,232 |
| Morris | -- | -- | -- | 27 | -- | -- | 3 | 293 | 293 | 20 | -- | 4 | 4 | -- | 8 | 40 | -- | -- | -- | 2 | -- | 411 | 411 |
| Neosho | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Wilson | -- | -- | -- | 27 | -- | -- | 7 | 14 | 14 | 7 | -- | 8 | 12 | -- | 8 | 35 | -- | -- | -- | 6 | -- | 135 | 135 |
| Woodson | -- | -- | -- | 110 | -- | -- | 3 | 93 | 10 | 6 | -- | 46 | 832 | -- | 8 | 101 | -- | -- | -- | 43 | -- | 1,252 | 1,252 |
| Total | 17 | -- | 17 | 1,561 | 1 | 52 | 109 | 1,291 | 434 | 812 | -- | 602 | 4,049 | 0 | 414 | 2,265 | -- | 4 | 1 | 388 | 1 | 11,953 | 11,970 |
| **WEST** | | | | | | | | | | | | | | | | | | | | | | | |
| Barton | 1 | -- | 1 | -- | -- | -- | -- | 0 | 1 | 8 | -- | -- | 1 | -- | -- | 0 | -- | -- | -- | 1 | -- | 10 | 11 |
| Ellsworth | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1 | -- | -- | 1 | -- | -- | -- | -- | -- | -- | -- | -- | 2 | 2 |
| Harper | 1 | 1 | 2 | -- | -- | -- | -- | -- | 1 | 1 | -- | -- | -- | -- | -- | 2 | -- | -- | -- | -- | -- | 4 | 5 |
| Harvey | 2 | -- | 2 | 27 | -- | -- | 3 | 10 | 11 | 8 | 1 | 4 | 5 | -- | 8 | 26 | 1 | -- | -- | 2 | 1 | 107 | 109 |
| Lincoln | -- | -- | -- | -- | -- | -- | -- | 4 | 4 | 4 | -- | -- | -- | -- | -- | 127 | -- | -- | -- | -- | -- | 140 | 140 |
| McPherson | 15 | 1 | 16 | 29 | -- | -- | 3 | 20 | 15 | 31 | 3 | 4 | 14 | -- | 8 | 26 | -- | -- | -- | 4 | -- | 158 | 174 |
| Mitchell | 1 | -- | 1 | -- | -- | -- | -- | 5 | 5 | 5 | -- | -- | 1 | -- | -- | 18 | -- | -- | -- | 3 | -- | 37 | 38 |
| Ottawa | -- | -- | -- | 27 | -- | -- | 3 | 65 | 24 | 17 | -- | 4 | 73 | -- | 8 | 109 | -- | -- | -- | 2 | -- | 333 | 333 |
| Pawnee | 1 | -- | 1 | -- | -- | -- | -- | 0 | 1 | 8 | -- | -- | 1 | -- | -- | 1 | -- | -- | -- | 1 | -- | 12 | 13 |
| Reno | 2 | -- | 2 | 0 | -- | -- | 0 | 0 | 0 | 2 | 0 | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 4 | 6 |
| Rice | 3 | -- | 3 | 0 | -- | -- | -- | 0 | 0 | 1 | 0 | 0 | 1 | -- | -- | 1 | -- | -- | -- | 0 | -- | 4 | 8 |
| Saline | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Sedgwick | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Stafford | 1 | -- | 1 | -- | -- | -- | -- | 1 | 1 | 10 | -- | -- | 1 | -- | -- | 0 | -- | -- | -- | 1 | -- | 13 | 14 |
| Sumner | -- | -- | -- | 27 | -- | -- | 3 | 10 | 10 | 6 | -- | 4 | 4 | -- | 8 | 26 | -- | -- | -- | 2 | -- | 101 | 101 |
| Total | 26 | 2 | 27 | 167 | -- | -- | 18 | 136 | 93 | 115 | 4 | 26 | 110 | -- | 48 | 404 | 1 | -- | -- | 18 | 1 | 1,127 | 1,154 |
| State total | 61 | 8 | 70 | 2,788 | 3 | 98 | 177 | 1,814 | 783 | 1,440 | 18 | 775 | 6,142 | 3 | 1,092 | 4,148 | 1 | 5 | 23 | 438 | 2 | 19,749 | 19,819 |

[1] International 1/4-inch rule.

Value of "0" indicates value greater than 0 but less than 500.

Rows and columns may not sum due to rounding.

Table 6.--Saw log receipts by Forest Survey Unit, species group, and State of origin, Kansas, 1998
(*Thousand board feet* [1])

**All Units**

| Species | Total | Iowa | Kansas | Missouri | Nebraska | Oklahoma |
|---|---|---|---|---|---|---|
| **SOFTWOODS** | | | | | | |
| Redcedar | 61 | -- | 61 | -- | -- | -- |
| Ponderosa pine | 8 | -- | 8 | -- | -- | -- |
| Total | 70 | -- | 70 | -- | -- | -- |
| **HARDWOODS** | | | | | | |
| Soft maple | 3,008 | -- | 2,647 | 143 | -- | 218 |
| Hard maple | 3 | -- | 3 | -- | -- | -- |
| Hickory | 22 | -- | 22 | -- | -- | -- |
| Pecan | 208 | -- | 177 | 16 | -- | 16 |
| Hackberry | 1,999 | -- | 1,814 | 63 | -- | 122 |
| Ash | 770 | -- | 664 | 53 | -- | 53 |
| Black walnut | 576 | -- | 513 | 32 | -- | 32 |
| Osage-orange | 18 | -- | 18 | -- | -- | -- |
| Sycamore | 1,190 | -- | 727 | 311 | -- | 152 |
| Cottonwood | 9,426 | -- | 5,942 | 1,765 | -- | 1,719 |
| Black cherry | 3 | -- | 3 | -- | -- | -- |
| Red oak group | 717 | -- | 632 | 42 | -- | 42 |
| White oak group | 3,089 | -- | 2,737 | 172 | -- | 179 |
| Black locust | 1 | -- | 1 | -- | -- | -- |
| Willow | 5 | -- | 5 | -- | -- | -- |
| Basswood | 6 | -- | 6 | -- | -- | -- |
| Elm | 603 | -- | 438 | 10 | -- | 156 |
| Other hardwoods | 2 | -- | 2 | -- | -- | -- |
| Total | 21,646 | -- | 16,352 | 2,607 | -- | 2,688 |
| All species | 21,716 | -- | 16,422 | 2,607 | -- | 2,688 |

**Northeast Unit**

| Species | Total | Iowa | Kansas | Missouri | Nebraska | Oklahoma |
|---|---|---|---|---|---|---|
| **SOFTWOODS** | | | | | | |
| Redcedar | 18 | -- | 18 | -- | -- | -- |
| Ponderosa pine | 7 | -- | 7 | -- | -- | -- |
| Total | 25 | -- | 25 | -- | -- | -- |
| **HARDWOODS** | | | | | | |
| Soft maple | 632 | -- | 632 | -- | -- | -- |
| Hard maple | 3 | -- | 3 | -- | -- | -- |
| Hickory | 10 | -- | 10 | -- | -- | -- |
| Pecan | 3 | -- | 3 | -- | -- | -- |
| Hackberry | 508 | -- | 498 | 10 | -- | -- |
| Ash | 95 | -- | 95 | -- | -- | -- |
| Black walnut | 110 | -- | 110 | -- | -- | -- |
| Osage-orange | 9 | -- | 9 | -- | -- | -- |
| Sycamore | 406 | -- | 118 | 288 | -- | -- |
| Cottonwood | 3,586 | -- | 1,842 | 1,744 | -- | -- |
| Black cherry | 3 | -- | 3 | -- | -- | -- |
| Red oak group | 93 | -- | 93 | -- | -- | -- |
| White oak group | 397 | -- | 363 | 35 | -- | -- |
| Willow | 1 | -- | 1 | -- | -- | -- |
| Basswood | 6 | -- | 6 | -- | -- | -- |
| Elm | 5 | -- | 5 | -- | -- | -- |
| Total | 5,867 | -- | 3,791 | 2,077 | -- | -- |
| All species | 5,893 | -- | 3,816 | 2,077 | -- | -- |

(Table 6 continued)

**Southeast Unit**

| Species | Total | Iowa | Kansas | Missouri | Nebraska | Oklahoma |
|---|---|---|---|---|---|---|
| **SOFTWOODS** | | | | | | |
| Redcedar | 17 | -- | 17 | -- | -- | -- |
| Total | 17 | -- | 17 | -- | -- | -- |
| **HARDWOODS** | | | | | | |
| Soft maple | 2,373 | -- | 2,013 | 143 | -- | 218 |
| Hard maple | 1 | -- | 1 | -- | -- | -- |
| Hickory | 12 | -- | 12 | -- | -- | -- |
| Pecan | 205 | -- | 173 | 16 | -- | 16 |
| Hackberry | 1,416 | -- | 1,241 | 53 | -- | 122 |
| Ash | 642 | -- | 536 | 53 | -- | 53 |
| Black walnut | 388 | -- | 324 | 32 | -- | 32 |
| Osage-orange | 5 | -- | 5 | -- | -- | -- |
| Sycamore | 783 | -- | 609 | 22 | -- | 152 |
| Cottonwood | 5,753 | -- | 4,013 | 21 | -- | 1,719 |
| Red oak group | 642 | -- | 539 | 42 | -- | 42 |
| White oak group | 2,460 | -- | 2,143 | 138 | -- | 179 |
| Willow | 4 | -- | 4 | -- | -- | -- |
| Basswood | 1 | -- | 1 | -- | -- | -- |
| Elm | 591 | -- | 425 | 10 | -- | 156 |
| Other hardwoods | 1 | -- | 1 | -- | -- | -- |
| Total | 15,258 | -- | 12,040 | 530 | -- | 2,688 |
| All species | 15,275 | -- | 12,057 | 530 | -- | 2,688 |

**West Unit**

| Species | Total | Iowa | Kansas | Missouri | Nebraska | Oklahoma |
|---|---|---|---|---|---|---|
| **SOFTWOODS** | | | | | | |
| Redcedar | 26 | -- | 26 | -- | -- | -- |
| Ponderosa pine | 2 | -- | 2 | -- | -- | -- |
| Total | 27 | -- | 27 | -- | -- | -- |
| **HARDWOODS** | | | | | | |
| Soft maple | 3 | -- | 3 | -- | -- | -- |
| Pecan | 0 | -- | 0 | -- | -- | -- |
| Hackberry | 76 | -- | 76 | -- | -- | -- |
| Ash | 33 | -- | 33 | -- | -- | -- |
| Black walnut | 78 | -- | 78 | -- | -- | -- |
| Osage-orange | 4 | -- | 4 | -- | -- | -- |
| Sycamore | 0 | -- | 0 | -- | -- | -- |
| Cottonwood | 86 | -- | 86 | -- | -- | -- |
| White oak group | 232 | -- | 232 | -- | -- | -- |
| Black locust | 1 | -- | 1 | -- | -- | -- |
| Elm | 7 | -- | 7 | -- | -- | -- |
| Other hardwoods | 1 | -- | 1 | -- | -- | -- |
| Total | 521 | -- | 521 | -- | -- | -- |
| All species | 548 | -- | 548 | -- | -- | -- |

[1] International 1/4-inch rule.
Value of "0" indicates value greater than 0 but less than 500.
Rows and columns may not sum due to rounding.

Table 7. --Veneer log production by Forest Survey Unit, county, and species group, Kansas, 1998

(*Thousand board feet* [1])

| Forest Survey Unit and county | Black walnut |
|---|---|
| **Northeast** | |
| Franklin | 2 |
| Johnson | 1 |
| Miami | 16 |
| Unit total | 19 |
| **Southeast** | |
| Allen | 2 |
| Anderson | 1 |
| Bourbon | 15 |
| Crawford | 2 |
| Linn | 16 |
| Lyon | 2 |
| Neosho | 3 |
| Wilson | 3 |
| Woodson | 1 |
| Unit total | 45 |
| **State total** | 64 |

[1] International 1/4-inch rule.

Table 8.--Wood material harvested for industrial roundwood by source of material and species group, Kansas, 1998 [1]
(*Thousand cubic feet*)

**All Units**

| Species group | Growing stock | | | | Non-growing stock | | | | | | | Total material used for products | Total material not used | Total material harvested |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Used for products | | Not used | | Used for products | | | | | Not used | | | | |
| | Sawtimber | Pole-timber | Logging residue | Total | Limbwood | Saplings | Cull trees | Dead trees | Nonforest trees | Logging slash | Total | | | |
| **SOFTWOODS** | | | | | | | | | | | | | | |
| Redcedar | 14.0 | 0.1 | 0.2 | 14.3 | -- | -- | 0.1 | -- | -- | 4.2 | 4.3 | 14.2 | 4.4 | 18.6 |
| Ponderosa pine | 1.5 | -- | 0.2 | 1.6 | -- | -- | 0.0 | -- | -- | 0.4 | 0.4 | 1.5 | 0.6 | 2.1 |
| Total | 15.5 | 0.1 | 0.3 | 15.9 | -- | -- | 0.1 | -- | -- | 4.7 | 4.7 | 15.7 | 5.0 | 20.7 |
| **HARDWOODS** | | | | | | | | | | | | | | |
| Soft maple | 383.1 | 0.1 | 42.5 | 425.7 | -- | -- | 47.9 | 12.5 | -- | 117.4 | 177.9 | 443.7 | 159.8 | 603.6 |
| Hard maple | 0.5 | -- | 0.2 | 0.7 | 0.0 | -- | 0.0 | -- | -- | 0.2 | 0.2 | 0.6 | 0.4 | 1.0 |
| Hickory | 15.2 | -- | 6.3 | 21.4 | 0.4 | -- | 1.2 | -- | -- | 5.0 | 6.6 | 16.8 | 11.3 | 28.1 |
| Pecan | 27.3 | -- | 11.3 | 38.6 | 0.8 | -- | 2.1 | -- | -- | 9.0 | 11.9 | 30.2 | 20.3 | 50.5 |
| Hackberry | 248.8 | -- | 27.6 | 276.3 | -- | -- | 31.2 | 8.2 | -- | 76.4 | 115.8 | 288.1 | 104.0 | 392.1 |
| Ash | 121.0 | -- | 50.0 | 171.0 | 3.4 | -- | 9.4 | -- | -- | 40.1 | 52.9 | 133.8 | 90.1 | 223.9 |
| Black walnut | 191.9 | -- | 18.2 | 210.0 | 4.0 | -- | 5.9 | -- | 27.6 | 50.9 | 88.5 | 229.4 | 69.1 | 298.5 |
| Osage-orange | -- | -- | -- | -- | 0.1 | -- | 3.0 | -- | -- | 2.0 | 5.1 | 3.1 | 2.0 | 5.1 |
| Sycamore | 106.3 | -- | 11.8 | 118.0 | -- | -- | 13.3 | 3.5 | -- | 32.6 | 49.5 | 123.1 | 44.4 | 167.5 |
| Cottonwood | 948.7 | 0.1 | 143.2 | 1,092.0 | -- | -- | -- | -- | -- | 293.6 | 293.6 | 948.8 | 436.8 | 1,385.6 |
| Black cherry | 0.4 | -- | 0.0 | 0.4 | -- | -- | 0.0 | 0.0 | -- | 0.1 | 0.2 | 0.4 | 0.2 | 0.6 |
| Red oak group | 123.7 | 6.8 | 40.1 | 170.6 | 0.1 | -- | 64.3 | -- | -- | 44.2 | 108.6 | 194.9 | 84.3 | 279.2 |
| White oak group | 469.9 | 25.7 | 152.2 | 647.9 | 0.4 | -- | 244.3 | -- | -- | 168.0 | 412.7 | 740.3 | 320.2 | 1,060.5 |
| Black locust | 0.1 | -- | 0.0 | 0.2 | 0.0 | -- | 0.0 | -- | -- | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| Willow | 0.7 | -- | 0.1 | 0.8 | -- | -- | 0.1 | 0.0 | -- | 0.2 | 0.3 | 0.8 | 0.3 | 1.1 |
| Basswood | 4.2 | 0.1 | 0.4 | 4.7 | -- | -- | 0.4 | 0.1 | -- | 1.0 | 1.5 | 4.8 | 1.4 | 6.2 |
| Elm | 60.1 | -- | 6.7 | 66.7 | -- | -- | 7.5 | 2.0 | -- | 18.4 | 27.9 | 69.6 | 25.1 | 94.7 |
| Other hardwoods | 0.3 | -- | 0.1 | 0.3 | 0.0 | -- | 0.0 | 0.0 | -- | 0.1 | 0.1 | 0.3 | 0.2 | 0.4 |
| Total | 2,701.9 | 32.8 | 510.7 | 3,245.3 | 9.3 | -- | 430.8 | 26.3 | 27.6 | 859.4 | 1,353.5 | 3,228.8 | 1,370.0 | 4,598.8 |
| All species | 2,717.4 | 32.9 | 511.0 | 3,261.3 | 9.3 | -- | 430.9 | 26.3 | 27.6 | 864.0 | 1,358.2 | 3,244.5 | 1,375.0 | 4,619.5 |

**Northeast Unit**

| Species group | Growing stock | | | | Non-growing stock | | | | | | | Total material used for products | Total material not used | Total material harvested |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Used for products | | Not used | | Used for products | | | | | Not used | | | | |
| | Sawtimber | Pole-timber | Logging residue | Total | Limbwood | Saplings | Cull trees | Dead trees | Nonforest trees | Logging slash | Total | | | |
| **SOFTWOODS** | | | | | | | | | | | | | | |
| Redcedar | 4.9 | 0.1 | 0.1 | 5.2 | -- | -- | 0.0 | -- | -- | 1.3 | 1.3 | 5.1 | 1.4 | 6.5 |
| Ponderosa pine | 1.2 | -- | 0.1 | 1.3 | -- | -- | 0.0 | -- | -- | 0.4 | 0.4 | 1.2 | 0.5 | 1.7 |
| Total | 6.1 | 0.1 | 0.3 | 6.5 | -- | -- | 0.0 | -- | -- | 1.7 | 1.7 | 6.3 | 1.9 | 8.2 |
| **HARDWOODS** | | | | | | | | | | | | | | |
| Soft maple | 146.2 | 0.1 | 16.2 | 162.5 | -- | -- | 18.2 | 4.8 | -- | 44.6 | 67.6 | 169.3 | 60.8 | 230.2 |
| Hard maple | 0.4 | -- | 0.2 | 0.6 | 0.0 | -- | 0.0 | -- | -- | 0.1 | 0.2 | 0.5 | 0.3 | 0.8 |
| Hickory | 7.2 | -- | 3.0 | 10.1 | 0.2 | -- | 0.6 | -- | -- | 2.4 | 3.1 | 7.9 | 5.3 | 13.3 |
| Pecan | 7.5 | -- | 3.1 | 10.7 | 0.2 | -- | 0.6 | -- | -- | 2.5 | 3.3 | 8.3 | 5.6 | 14.0 |
| Hackberry | 53.0 | -- | 539.0 | 58.9 | -- | -- | 6.7 | 1.7 | -- | 16.3 | 24.7 | 61.4 | 22.2 | 83.6 |
| Ash | 39.5 | -- | 16.3 | 55.8 | 1.1 | -- | 3.1 | -- | -- | 13.1 | 17.3 | 43.7 | 29.4 | 73.1 |
| Black walnut | 68.0 | -- | 6.5 | 74.5 | 1.4 | -- | 2.1 | -- | 9.8 | 18.0 | 31.4 | 81.4 | 24.5 | 105.9 |
| Osage-orange | -- | -- | -- | -- | 0.0 | -- | 1.5 | -- | -- | 1.0 | 2.5 | 1.5 | 1.0 | 2.5 |
| Sycamore | 25.0 | -- | 2.8 | 27.7 | -- | -- | 3.1 | 0.8 | -- | 7.7 | 11.6 | 28.9 | 10.4 | 39.4 |
| Cottonwood | 306.0 | 0.1 | 46.3 | 353.3 | -- | -- | -- | -- | -- | 94.8 | 94.8 | 307.0 | 141.1 | 448.1 |
| Black cherry | 0.4 | -- | 0.1 | 0.4 | -- | -- | 0.0 | 0.0 | -- | 0.1 | 0.2 | 0.4 | 0.0 | 0.6 |
| Red oak group | 71.3 | 3.9 | 23.1 | 98.3 | 0.1 | -- | 3,731.0 | -- | -- | 2,535.0 | 62.6 | 112.3 | 48.6 | 160.9 |
| White oak group | 169.3 | 9.3 | 54.8 | 233.4 | 0.1 | -- | 88.0 | -- | -- | 60.5 | 148.7 | 266.7 | 115.3 | 382.1 |
| Willow | 0.1 | -- | 0.0 | 0.2 | -- | -- | 0.0 | 0.0 | -- | 0.0 | 0.1 | 0.2 | 0.1 | 0.2 |
| Basswood | 4.0 | 0.1 | 0.4 | 4.6 | -- | -- | 0.4 | 0.1 | -- | 1.0 | 1.4 | 4.6 | 1.4 | 6.0 |
| Elm | 4.4 | -- | 0.5 | 4.9 | -- | -- | 0.6 | 0.1 | -- | 1.4 | 2.1 | 5.1 | 1.9 | 7.0 |
| Total | 903.4 | 13.5 | 179.1 | 1,096.0 | 3.2 | -- | 161.9 | 7.6 | 9.8 | 289.0 | 471.6 | 1,099.4 | 468.1 | 1,567.5 |
| All species | 909.6 | 13.6 | 179.4 | 1,102.5 | 3.2 | -- | 161.9 | 7.6 | 9.8 | 290.7 | 473.3 | 1,105.7 | 470.0 | 1,575.7 |

(Table 8 continued)

**Southeast Unit**

| Species group | Growing stock | | | | Non-growing stock | | | | | | | Total material used for products | Total material not used | Total material harvested |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Used for products | | Not used | | Used for products | | | | | Not used | | | | |
| | Sawtimber | Pole-timber | Logging residue | Total | Limbwood | Saplings | Cull trees | Dead trees | Nonforest trees | Logging slash | Total | | | |
| **SOFTWOODS** | | | | | | | | | | | | | | |
| Redcedar | 3.6 | -- | 0.1 | 3.6 | -- | -- | 0.0 | -- | -- | 1.2 | 1.2 | 3.6 | 1.2 | 4.8 |
| Total | 3.6 | -- | 0.1 | 3.6 | -- | -- | 0.0 | -- | -- | 1.2 | 1.2 | 3.6 | 1.2 | 4.8 |
| **HARDWOODS** | | | | | | | | | | | | | | |
| Soft maple | 214.0 | -- | 23.7 | 237.8 | -- | -- | 26.9 | 7.0 | -- | 65.7 | 99.6 | 247.9 | 89.5 | 337.4 |
| Hard maple | 0.1 | -- | 0.0 | 0.1 | 0.0 | -- | 0.0 | -- | -- | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| Hickory | 8.0 | -- | 3.3 | 11.3 | 0.2 | -- | 0.6 | -- | -- | 2.6 | 3.5 | 8.8 | 5.9 | 14.8 |
| Pecan | 16.9 | -- | 7.0 | 23.9 | 0.5 | -- | 1.3 | -- | -- | 5.6 | 7.4 | 18.7 | 12.6 | 31.3 |
| Hackberry | 177.0 | -- | 19.6 | 196.6 | -- | -- | 22.2 | 5.8 | -- | 54.4 | 82.4 | 205.0 | 74.0 | 279.0 |
| Ash | 67.1 | -- | 27.7 | 64.8 | 1.9 | -- | 5.2 | -- | -- | 22.2 | 29.4 | 74.2 | 50.0 | 124.2 |
| Black walnut | 109.2 | -- | 10.3 | 119.5 | 2.3 | -- | 3.3 | -- | 15.7 | 29.0 | 50.3 | 130.5 | 39.3 | 169.8 |
| Osage-orange | -- | -- | -- | -- | 0.0 | -- | 0.8 | -- | -- | 0.6 | 1.4 | 0.8 | 0.6 | 1.4 |
| Sycamore | 77.8 | -- | 8.6 | 86.4 | -- | -- | 9.8 | 2.6 | -- | 23.9 | 36.2 | 90.1 | 32.5 | 122.6 |
| Cottonwood | 624.7 | -- | 64.3 | 719.0 | -- | -- | -- | -- | -- | 193.5 | 193.5 | 624.7 | 287.9 | 912.6 |
| Red oak group | 46.9 | 2.6 | 15.2 | 64.7 | 0.0 | -- | 24.4 | -- | -- | 16.8 | 41.2 | 73.9 | 32.0 | 105.9 |
| White oak group | 256.6 | 14.0 | 83.1 | 353.7 | 0.2 | -- | 133.4 | -- | -- | 91.7 | 225.3 | 404.2 | 174.8 | 579.0 |
| Willow | 0.6 | -- | 0.1 | 0.6 | -- | -- | 0.1 | 0.0 | -- | 0.2 | 0.3 | 0.7 | 0.2 | 0.9 |
| Basswood | 0.1 | -- | 0.0 | 0.1 | -- | -- | 0.0 | 0.0 | -- | 0.0 | 0.1 | 0.1 | 0.0 | 0.2 |
| Elm | 53.1 | -- | 5.9 | 59.0 | -- | -- | 6.7 | 1.7 | -- | 16.3 | 24.7 | 61.6 | 22.2 | 83.8 |
| Other hardwoods | 0.1 | | | 0.2 | | | | | | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| Total | 1,652.2 | 16.6 | 299.0 | 1,967.9 | 0.0 | -- | 234.7 | 17.2 | 15.7 | 522.6 | 795.3 | 1,941.5 | 821.6 | 2,763.2 |
| All species | 1,655.8 | 16.6 | 299.1 | 1,971.5 | 5.2 | -- | 234.7 | 17.2 | 15.7 | 523.7 | 796.5 | 1,945.2 | 1,392.2 | 2,768.0 |

**West Unit**

| Species group | Growing stock | | | | Non-growing stock | | | | | | | Total material used for products | Total material not used | Total material harvested |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Used for products | | Not used | | Used for products | | | | | Not used | | | | |
| | Sawtimber | Pole-timber | Logging residue | Total | Limbwood | Saplings | Cull trees | Dead trees | Nonforest trees | Logging slash | Total | | | |
| **SOFTWOODS** | | | | | | | | | | | | | | |
| Redcedar | 5.5 | -- | 0.0 | 5.5 | -- | -- | 0.0 | -- | -- | 1.8 | 1.8 | 5.5 | 1.8 | 7.3 |
| Ponderosa pine | 0.3 | -- | 0.0 | 0.3 | -- | -- | 0.0 | -- | -- | 0.1 | 0.1 | 0.3 | 0.1 | 0.4 |
| Total | 5.7 | -- | 0.1 | 5.8 | -- | -- | 0.0 | -- | -- | 1.8 | 1.9 | 5.8 | 1.9 | 7.7 |
| **HARDWOODS** | | | | | | | | | | | | | | |
| Soft maple | 22.8 | -- | 2.5 | 25.4 | -- | -- | 2.9 | 0.7 | -- | 7.0 | 10.6 | 26.5 | 9.5 | 36.0 |
| Pecan | 2.8 | -- | 1.2 | 4.0 | 0.1 | -- | 0.2 | -- | -- | 0.9 | 1.2 | 3.1 | 2.1 | 5.2 |
| Hackberry | 18.7 | -- | 2.1 | 20.8 | -- | -- | 2.3 | 0.6 | -- | 5.7 | 8.7 | 21.7 | 7.8 | 29.5 |
| Ash | 14.4 | -- | 6.0 | 20.4 | 0.4 | -- | 1.1 | -- | -- | 4.8 | 6.3 | 15.9 | 10.7 | 26.7 |
| Black walnut | 14.6 | -- | 1.4 | 16.0 | 0.3 | -- | 0.5 | -- | 2.1 | 3.9 | 6.8 | 17.5 | 5.3 | 22.8 |
| Osage-orange | -- | -- | -- | -- | 0.0 | -- | 0.7 | -- | -- | 0.5 | 1.2 | 0.7 | 0.5 | 1.2 |
| Sycamore | 3.5 | -- | 0.4 | 3.9 | -- | -- | 0.4 | 0.1 | -- | 1.1 | 1.6 | 4.1 | 1.5 | 5.6 |
| Cottonwood | 17.0 | -- | 2.6 | 19.6 | -- | -- | -- | -- | -- | 5.3 | 5.3 | 17.0 | 7.9 | 24.9 |
| Red oak group | 5.5 | 0.3 | 1.8 | 7.6 | 0.0 | -- | 2.9 | -- | -- | 2.0 | 4.8 | 8.6 | 3.7 | 12.4 |
| White oak group | 44.1 | 2.4 | 14.3 | 60.8 | 0.0 | -- | 22.9 | -- | -- | 15.8 | 38.7 | 69.4 | 30.0 | 99.5 |
| Black locust | 0.1 | -- | 0.0 | 0.2 | 0.0 | -- | 0.0 | -- | -- | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| Elm | 2.5 | -- | 0.3 | 2.7 | -- | -- | 0.3 | 0.1 | -- | 0.8 | 1.2 | 2.9 | 1.0 | 3.9 |
| Other hardwoods | 0.1 | -- | 0.0 | 0.2 | 0.0 | -- | 0.0 | 0.0 | -- | 0.0 | 0.1 | 0.2 | 0.1 | 0.2 |
| Total | 146.3 | 2.7 | 32.5 | 181.5 | 0.9 | -- | 34.3 | 1.6 | 2.1 | 47.7 | 86.6 | 187.8 | 80.2 | 268.1 |
| All species | 152.0 | 2.7 | 32.6 | 187.3 | 0.9 | -- | 34.3 | 1.6 | 2.1 | 49.6 | 88.4 | 193.6 | 82.1 | 275.7 |

Value of "0" indicates value greater than 0 but less than 500.
Rows and columns may not sum due to rounding.

Table 9.--Harvest residues generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Kansas, 1998

| Unit and county | Red cedar | Total swds. | Soft maple | Hard maple | Hickory | Pecan | Hack-berry | Ash | Black walnut | Osage-orange | Sycamore | Cotton-wood | Black cherry | Red oak group | White oak group | Black-locust | Willow | Bass-wood | Elm | Other hwds | Total hwds. | All species |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTHEAST** | | | | | | | | | | | | | | | | | | | | | | |
| Atchison | -- | -- | -- | 4 | -- | -- | -- | 2 | 1 | -- | 1 | 61 | -- | 0 | 14 | -- | -- | -- | -- | -- | 83 | 83 |
| Brown | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 12 | -- | 1 | 1 | -- | -- | -- | -- | -- | 14 | 14 |
| Clay | 0 | -- | 0 | 2 | -- | 0 | 1 | 1 | 1 | 0 | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 9 | 9 |
| Dickinson | -- | -- | -- | 3 | 1 | 0 | 1 | 1 | 8 | -- | 0 | 1 | -- | 26 | 55 | -- | -- | 1 | 0 | -- | 98 | 98 |
| Doniphan | -- | 0 | 0 | -- | 0 | -- | -- | -- | 0 | 0 | 1 | 2 | 0 | 3 | 0 | -- | -- | -- | -- | -- | 7 | 7 |
| Douglas | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Franklin | 1 | -- | 1 | 34 | 1 | 1 | 9 | 8 | 2 | 1 | 1 | 2 | -- | 5 | 9 | -- | 0 | 0 | 0 | -- | 72 | 73 |
| Geary | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Jefferson | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 2 | 7 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 18 | 18 |
| Johnson | 0 | -- | 0 | 2 | -- | 0 | 1 | 1 | 1 | -- | 0 | 1 | -- | 1 | 3 | -- | -- | 0 | 0 | -- | 11 | 11 |
| Leavenworth | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 1 | 6 | -- | 1 | 3 | -- | -- | -- | 0 | -- | 15 | 15 |
| Miami | -- | -- | -- | 2 | 3 | 0 | 1 | 2 | 8 | -- | 0 | 0 | -- | 5 | 3 | -- | -- | 0 | 0 | -- | 25 | 25 |
| Nemaha | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 2 | -- | 1 | 1 | -- | -- | -- | -- | -- | 5 | 5 |
| Osage | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Pottawatomie | 0 | -- | 0 | 2 | -- | 0 | 1 | 1 | 1 | 0 | 0 | 15 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 25 | 25 |
| Riley | 0 | -- | 0 | 2 | -- | 0 | 5 | 3 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 13 | 13 |
| Shawnee | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 2 | 30 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 38 | 38 |
| Wabaunsee | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Wyandotte | 0 | -- | 0 | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Total | 1 | 0 | 2 | 61 | 5 | 6 | 22 | 29 | 24 | 1 | 10 | 141 | 0 | 49 | 115 | -- | 0 | 1 | 2 | -- | 468 | 470 |
| **SOUTHEAST** | | | | | | | | | | | | | | | | | | | | | | |
| Allen | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Anderson | 0 | -- | 0 | 2 | 0 | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | 0 | 0 | 0 | 8 | 9 |
| Bourbon | -- | -- | -- | 2 | 2 | 0 | 1 | 1 | 7 | -- | 0 | 0 | -- | 1 | 5 | -- | -- | -- | 0 | -- | 20 | 20 |
| Butler | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 4 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 11 | 11 |
| Chase | -- | -- | -- | 2 | -- | 0 | 2 | 1 | 0 | -- | 0 | 0 | -- | 1 | 6 | -- | -- | -- | 0 | -- | 13 | 13 |
| Chautauqua | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Cherokee | 0 | -- | 0 | 8 | 0 | 1 | 1 | 13 | 16 | 0 | 3 | 15 | -- | 1 | 54 | -- | -- | -- | 1 | -- | 112 | 112 |
| Coffey | 0 | -- | 0 | 9 | -- | 0 | 3 | 4 | 0 | 0 | 0 | 5 | -- | 2 | 4 | -- | -- | -- | 0 | -- | 29 | 29 |
| Cowley | -- | -- | -- | 6 | -- | 0 | 5 | 1 | 0 | -- | 4 | 60 | -- | 1 | 13 | -- | -- | -- | 6 | -- | 96 | 96 |
| Crawford | 0 | -- | 0 | 2 | 0 | 1 | 2 | 1 | 1 | -- | 3 | 3 | -- | 2 | 2 | -- | -- | -- | 1 | -- | 17 | 17 |
| Elk | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Greenwood | -- | -- | -- | 6 | -- | 0 | 5 | 1 | 0 | -- | 6 | 69 | -- | 1 | 11 | -- | -- | -- | 6 | -- | 104 | 104 |
| Labette | 0 | -- | 0 | 2 | 1 | 1 | 2 | 3 | 1 | 0 | 0 | 2 | -- | 2 | 3 | -- | 0 | -- | 1 | -- | 19 | 19 |
| Linn | 0 | -- | 0 | 2 | 3 | 0 | 1 | 2 | 8 | -- | 1 | 0 | -- | 4 | 2 | -- | -- | -- | 0 | -- | 23 | 23 |
| Lyon | -- | -- | -- | 9 | -- | 0 | 9 | 1 | 1 | -- | 7 | 67 | -- | 1 | 28 | -- | -- | -- | 3 | -- | 126 | 126 |
| Marion | 0 | -- | 0 | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Montgomery | 0 | -- | 0 | 21 | -- | 4 | 17 | 9 | 0 | -- | 4 | 0 | -- | 12 | 18 | -- | -- | -- | 0 | -- | 85 | 85 |
| Morris | -- | -- | -- | 2 | -- | 0 | 17 | 1 | 1 | -- | 0 | 0 | -- | 1 | 3 | -- | -- | -- | 0 | -- | 25 | 25 |
| Neosho | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Wilson | -- | -- | -- | 2 | -- | 1 | 1 | 1 | 0 | -- | 0 | 1 | -- | 1 | 3 | -- | -- | -- | 0 | -- | 10 | 10 |
| Woodson | -- | -- | -- | 6 | -- | 0 | 5 | 1 | 0 | -- | 3 | 59 | -- | 1 | 8 | -- | -- | -- | 2 | -- | 86 | 86 |
| Total | 1 | -- | 1 | 89 | 6 | 13 | 74 | 50 | 39 | 1 | 32 | 288 | -- | 32 | 175 | -- | 0 | 0 | 22 | 0 | 822 | 823 |
| **WEST** | | | | | | | | | | | | | | | | | | | | | | |
| Barton | 0 | -- | 0 | -- | -- | -- | 0 | 0 | 0 | -- | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 1 | 1 |
| Ellsworth | -- | -- | -- | -- | -- | -- | -- | -- | 0 | -- | -- | 0 | -- | -- | -- | -- | -- | -- | -- | -- | 0 | 0 |
| Harper | 0 | 0 | 0 | -- | -- | -- | -- | 0 | 0 | -- | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- | 0 | 0 |
| Harvey | 0 | -- | 0 | 2 | -- | 0 | 1 | 1 | 0 | 0 | 0 | 0 | -- | 1 | 2 | 0 | -- | -- | 0 | 0 | 8 | 8 |
| Lincoln | -- | -- | -- | -- | -- | -- | 0 | 0 | 0 | -- | -- | -- | -- | -- | 10 | -- | -- | -- | -- | -- | 11 | 11 |
| McPherson | 1 | 0 | 1 | 2 | -- | 0 | 1 | 2 | 1 | 0 | 0 | 1 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 11 | 12 |
| Mitchell | 0 | -- | 0 | -- | -- | -- | 0 | 1 | 0 | -- | -- | 0 | -- | -- | 1 | -- | -- | -- | 0 | -- | 3 | 3 |
| Ottawa | -- | -- | -- | 2 | -- | 0 | 4 | 3 | 1 | -- | 0 | 5 | -- | 1 | 8 | -- | -- | -- | 0 | -- | 24 | 24 |
| Pawnee | 0 | -- | 0 | -- | -- | -- | 0 | 0 | 0 | -- | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 1 | 1 |
| Reno | 0 | -- | 0 | 0 | -- | 0 | 0 | 0 | 0 | 0 | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 0 | 0 |
| Rice | 0 | -- | 0 | 0 | -- | -- | 0 | 0 | 0 | 0 | 0 | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 0 | 1 |
| Saline | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Sedgwick | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Stafford | 0 | -- | 0 | -- | -- | -- | 0 | 0 | 0 | -- | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 1 | 1 |
| Sumner | -- | -- | -- | 2 | -- | 0 | 1 | 1 | 0 | -- | 0 | 0 | -- | 1 | 2 | -- | -- | -- | 0 | -- | 7 | 7 |
| Total | 2 | 0 | 2 | 10 | -- | 2 | 8 | 11 | 5 | 0 | 1 | 8 | -- | 4 | 30 | 0 | -- | -- | 1 | 0 | 80 | 82 |
| State total | 4 | 1 | 5 | 160 | 11 | 20 | 104 | 90 | 69 | 2 | 44 | 437 | 0 | 84 | 320 | 0 | 0 | 1 | 25 | 0 | 1,370 | 1,375 |

Units in thousands of cubic feet.
Value of "0" indicates value greater than 0 but less than 500.
Rows and columns may not sum due to rounding.

Table 10.--Growing-stock removals for industrial roundwood, by Forest Survey Unit, county, and species group, Kansas, 1998
(*Thousand cubic feet*)

| Unit and county | Red-cedar | Ponderosa pine | Total swds | Soft maple | Hard maple | Hickory | Pecan | Hackberry | Ash | Black walnut | Sycamore | Cotton-wood | Black cherry | Red oak group | White oak group | Black-locust | Willow | Bass-wood | Elm | Other hwds. | Total hwds. | All species |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTHEAST UNIT** | | | | | | | | | | | | | | | | | | | | | | |
| Atchison | -- | -- | -- | 11 | -- | -- | -- | -- | 3 | 2 | 2 | 152 | -- | 1 | 29 | -- | -- | -- | -- | -- | 200 | 200 |
| Brown | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 31 | -- | 2 | 2 | -- | -- | -- | -- | -- | 35 | 35 |
| Clay | 0 | -- | 0 | 4 | -- | -- | 1 | 2 | 3 | 3 | 1 | 1 | -- | 1 | 5 | -- | -- | -- | 0 | -- | 20 | 20 |
| Dickinson | -- | -- | -- | 7 | -- | 2 | 1 | 4 | 2 | 24 | 1 | 3 | -- | 53 | 112 | -- | -- | 3 | 0 | -- | 211 | 211 |
| Doniphan | -- | 1 | 1 | -- | 1 | 1 | -- | -- | -- | 0 | 2 | 5 | 0 | 5 | 0 | -- | -- | -- | -- | -- | 15 | 16 |
| Douglas | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Franklin | 2 | -- | 2 | 89 | -- | 1 | 1 | 24 | 16 | 7 | 2 | 4 | -- | 9 | 18 | -- | 0 | 1 | 1 | -- | 174 | 176 |
| Geary | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Jefferson | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 6 | 17 | -- | 1 | 8 | -- | -- | -- | 0 | -- | 43 | 43 |
| Johnson | 2 | -- | 2 | 5 | -- | -- | 1 | 2 | 3 | 3 | 1 | 2 | -- | 2 | 7 | -- | -- | 1 | 1 | -- | 27 | 29 |
| Leavenworth | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 3 | 15 | -- | 1 | 5 | -- | -- | -- | 0 | -- | 35 | 35 |
| Miami | -- | -- | -- | 4 | -- | 6 | 1 | 2 | 4 | 25 | 1 | 1 | -- | 10 | 7 | -- | -- | 0 | 0 | -- | 60 | 60 |
| Nemaha | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 6 | -- | 2 | 2 | -- | -- | -- | -- | -- | 10 | 10 |
| Osage | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 17 | 17 |
| Pottawatomie | 1 | -- | 1 | 5 | -- | -- | 1 | 2 | 2 | 2 | 1 | 37 | -- | 1 | 9 | -- | -- | -- | 0 | -- | 59 | 60 |
| Riley | 0 | -- | 0 | 4 | -- | -- | 1 | 12 | 5 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 30 | 31 |
| Shawnee | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 5 | 74 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 94 | 94 |
| Wabaunsee | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Wyandotte | 0 | -- | 0 | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 17 | 17 |
| Total | 5 | 1 | 6 | 163 | 1 | 10 | 11 | 59 | 56 | 74 | 28 | 353 | 0 | 98 | 233 | -- | 0 | 5 | 5 | -- | 1,096 | 1,102 |
| **SOUTHEAST UNIT** | | | | | | | | | | | | | | | | | | | | | | |
| Allen | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 17 | 17 |
| Anderson | 1 | -- | 1 | 4 | 0 | 0 | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 5 | -- | -- | 0 | 0 | 0 | 19 | 20 |
| Bourbon | -- | -- | -- | 6 | -- | 4 | 1 | 2 | 2 | 21 | 1 | 1 | -- | 2 | 11 | -- | -- | -- | 0 | -- | 49 | 49 |
| Butler | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 10 | -- | 1 | 5 | -- | -- | -- | 0 | -- | 27 | 27 |
| Chase | -- | -- | -- | 4 | -- | -- | 1 | 6 | 2 | 1 | 1 | 1 | -- | 1 | 13 | -- | -- | -- | 0 | -- | 29 | 29 |
| Chautauqua | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Cherokee | 0 | -- | 0 | 22 | -- | 1 | 1 | 2 | 24 | 48 | 7 | 37 | -- | 2 | 108 | -- | -- | -- | 3 | -- | 256 | 256 |
| Coffey | 0 | -- | 0 | 25 | -- | -- | 1 | 8 | 8 | 1 | 1 | 13 | -- | 3 | 9 | -- | -- | -- | 0 | -- | 69 | 69 |
| Cowley | -- | -- | -- | 17 | -- | -- | 1 | 14 | 2 | 1 | 11 | 150 | -- | 1 | 26 | -- | -- | -- | 15 | -- | 237 | 237 |
| Crawford | 0 | -- | 0 | 4 | -- | 1 | 1 | 4 | 2 | 2 | 7 | 8 | -- | 3 | 5 | -- | -- | -- | 2 | -- | 40 | 41 |
| Elk | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Greenwood | -- | -- | -- | 15 | -- | -- | 1 | 13 | 2 | 1 | 15 | 172 | -- | 1 | 21 | -- | -- | -- | 17 | -- | 258 | 258 |
| Labette | 1 | -- | 1 | 5 | -- | 1 | 2 | 7 | 5 | 4 | 1 | 4 | -- | 5 | 6 | -- | 1 | -- | 3 | -- | 43 | 44 |
| Linn | 1 | -- | 1 | 6 | -- | 5 | 1 | 2 | 4 | 24 | 2 | 1 | -- | 8 | 4 | -- | -- | -- | 0 | -- | 56 | 57 |
| Lyon | -- | -- | -- | 25 | -- | -- | 1 | 23 | 2 | 4 | 17 | 66 | -- | 1 | 56 | -- | -- | -- | 9 | -- | 305 | 305 |
| Marion | 0 | -- | 0 | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 17 | 17 |
| Montgomery | 1 | -- | 1 | 55 | -- | -- | 8 | 44 | 17 | 1 | 9 | 1 | -- | 24 | 37 | -- | -- | -- | 0 | -- | 196 | 197 |
| Morris | -- | -- | -- | 4 | -- | -- | 1 | 45 | 2 | 3 | 1 | 1 | -- | 1 | 6 | -- | -- | -- | 0 | -- | 64 | 64 |
| Neosho | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 17 | 17 |
| Wilson | -- | -- | -- | 4 | -- | -- | 2 | 2 | 2 | 1 | 1 | 2 | -- | 1 | 5 | -- | -- | -- | 1 | -- | 23 | 23 |
| Woodson | -- | -- | -- | 17 | -- | -- | 1 | 14 | 2 | 1 | 7 | 148 | -- | 1 | 16 | -- | -- | -- | 7 | -- | 213 | 213 |
| Total | 4 | -- | 4 | 238 | 0 | 11 | 24 | 197 | 95 | 120 | 86 | 719 | -- | 65 | 354 | -- | 1 | 0 | 59 | 0 | 1,968 | 1,971 |
| **WEST UNIT** | | | | | | | | | | | | | | | | | | | | | | |
| Barton | 0 | -- | 0 | -- | -- | -- | -- | 0 | 0 | 1 | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 2 | 2 |
| Ellsworth | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0 | -- | 0 | -- | -- | -- | -- | -- | -- | -- | -- | 0 | 0 |
| Harper | 0 | 0 | 0 | -- | -- | -- | -- | -- | 0 | 0 | -- | -- | -- | -- | 0 | -- | -- | -- | -- | -- | 1 | 1 |
| Harvey | 0 | -- | 0 | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | 0 | -- | -- | 0 | 0 | 17 | 18 |
| Lincoln | -- | -- | -- | -- | -- | -- | -- | 1 | 1 | 1 | -- | -- | -- | -- | 20 | -- | -- | -- | -- | -- | 22 | 22 |
| McPherson | 3 | 0 | 3 | 4 | -- | -- | 1 | 3 | 3 | 4 | 1 | 2 | -- | 1 | 4 | -- | -- | -- | 1 | -- | 25 | 28 |
| Mitchell | 0 | -- | 0 | -- | -- | -- | -- | 1 | 1 | 1 | -- | 0 | -- | -- | 3 | -- | -- | -- | 0 | -- | 6 | 6 |
| Ottawa | -- | -- | -- | 4 | -- | -- | 1 | 10 | 5 | 2 | 1 | 13 | -- | 1 | 17 | -- | -- | -- | 0 | -- | 55 | 55 |
| Pawnee | 0 | -- | 0 | -- | -- | -- | -- | 0 | 0 | 1 | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 2 | 2 |
| Reno | 0 | -- | 0 | 0 | -- | -- | 0 | 0 | 0 | 0 | 0 | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 1 | 1 |
| Rice | 1 | -- | 1 | 0 | -- | -- | -- | 0 | 0 | 0 | 0 | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 1 | 1 |
| Saline | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Sedgwick | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Stafford | 0 | -- | 0 | -- | -- | -- | -- | 0 | 0 | 1 | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 2 | 2 |
| Sumner | -- | -- | -- | 4 | -- | -- | 1 | 2 | 2 | 1 | 1 | 1 | -- | 1 | 4 | -- | -- | -- | 0 | -- | 16 | 16 |
| Total | 5 | 0 | 6 | 25 | -- | -- | 4 | 21 | 20 | 16 | 4 | 20 | -- | 8 | 61 | 0 | -- | -- | 3 | 0 | 182 | 187 |
| State total | 14 | 2 | 16 | 426 | 1 | 21 | 39 | 276 | 171 | 210 | 118 | 1,092 | 0 | 171 | 648 | 0 | 1 | 5 | 67 | 0 | 3,245 | 3,261 |

Value of "0" indicates value greater than 0 but less than 500.
Rows and columns may not sum due to rounding.

Table 11.--Sawtimber removals from timberland for industrial roundwood production by Forest Survey Unit, county, and species group, Kansas, 1998.

*(Thousand board feet [1])*

| Unit and county | Red cedar | Ponderosa pine | Total swds. | Soft maple | Hard maple | Hickory | Pecan | Hack-berry | Ash | Black walnut | Sycamore | Cotton-wood | Black cherry | Red oak group | White oak group | Black-locust | Willow | Bass-wood | Elm | Other hwds. | Total hwds. | All species |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NORTHEAST** | | | | | | | | | | | | | | | | | | | | | | |
| Atchison | -- | -- | -- | 61 | -- | -- | -- | -- | 15 | 12 | 12 | 899 | -- | 2 | 111 | -- | -- | -- | -- | -- | 1,113 | 1,113 |
| Brown | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 181 | -- | 8 | 8 | -- | -- | -- | -- | -- | 197 | 197 |
| Clay | 1 | -- | 1 | 24 | -- | -- | 4 | 10 | 12 | 20 | 4 | 5 | -- | 5 | 18 | -- | -- | -- | 2 | -- | 103 | 105 |
| Dickinson | -- | -- | -- | 39 | -- | 12 | 3 | 21 | 11 | 151 | 4 | 16 | -- | 202 | 427 | -- | -- | 15 | 2 | -- | 901 | 901 |
| Doniphan | -- | 7 | 7 | -- | 3 | 4 | -- | -- | -- | 2 | 12 | 29 | 2 | 20 | 1 | -- | -- | -- | -- | -- | 73 | 80 |
| Douglas | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Franklin | 8 | -- | 8 | 522 | -- | 6 | 6 | 141 | 77 | 45 | 14 | 23 | -- | 35 | 69 | -- | 1 | 5 | 4 | -- | 948 | 957 |
| Geary | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Jefferson | -- | -- | -- | 24 | -- | -- | 3 | 11 | 11 | 5 | 35 | 101 | -- | 5 | 31 | -- | -- | -- | 2 | -- | 228 | 228 |
| Johnson | 8 | -- | 8 | 30 | -- | -- | 3 | 9 | 14 | 16 | 6 | 14 | -- | 7 | 26 | -- | -- | 6 | 4 | -- | 136 | 144 |
| Leavenworth | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 16 | 91 | -- | 5 | 21 | -- | -- | -- | 2 | -- | 186 | 186 |
| Miami | -- | -- | -- | 26 | -- | 27 | 3 | 9 | 21 | 159 | 4 | 4 | -- | 39 | 25 | -- | -- | 0 | 2 | -- | 319 | 319 |
| Nemaha | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 36 | -- | 8 | 8 | -- | -- | -- | -- | -- | 53 | 53 |
| Osage | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 6 | 4 | 5 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 84 | 84 |
| Pottawatomie | 4 | -- | 4 | 27 | -- | -- | 3 | 9 | 11 | 11 | 4 | 221 | -- | 5 | 34 | -- | -- | -- | 2 | -- | 327 | 331 |
| Riley | 2 | -- | 2 | 24 | -- | -- | 3 | 70 | 25 | 7 | 4 | 4 | -- | 5 | 17 | -- | -- | -- | 2 | -- | 161 | 162 |
| Shawnee | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 28 | 438 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 541 | 541 |
| Wabaunsee | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Wyandotte | 1 | -- | 1 | 24 | -- | -- | 3 | 9 | 11 | 7 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 85 | 86 |
| Total | 24 | 7 | 31 | 949 | 3 | 49 | 52 | 344 | 270 | 468 | 162 | 2,084 | 2 | 375 | 891 | -- | 1 | 26 | 29 | -- | 5,704 | 5,735 |
| **SOUTHEAST** | | | | | | | | | | | | | | | | | | | | | | |
| Allen | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 7 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 84 | 84 |
| Anderson | 3 | -- | 3 | 25 | 1 | 1 | 3 | 10 | 11 | 7 | 5 | 5 | -- | 5 | 18 | -- | -- | 1 | 2 | 1 | 95 | 98 |
| Bourbon | -- | -- | -- | 34 | -- | 17 | 3 | 9 | 11 | 132 | 5 | 4 | -- | 7 | 42 | -- | -- | -- | 2 | -- | 266 | 266 |
| Butler | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 8 | 4 | 58 | -- | 5 | 18 | -- | -- | -- | 2 | -- | 141 | 141 |
| Chase | -- | -- | -- | 24 | -- | -- | 3 | 34 | 11 | 5 | 4 | 4 | -- | 5 | 49 | -- | -- | -- | 2 | -- | 140 | 140 |
| Chautauqua | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Cherokee | 1 | -- | 1 | 128 | -- | 3 | 6 | 14 | 118 | 298 | 42 | 220 | -- | 8 | 414 | -- | -- | -- | 15 | -- | 1,265 | 1,266 |
| Coffey | 1 | -- | 1 | 147 | -- | -- | 3 | 46 | 40 | 6 | 4 | 76 | -- | 13 | 33 | -- | -- | -- | 2 | -- | 371 | 372 |
| Cowley | -- | -- | -- | 98 | -- | -- | 3 | 83 | 11 | 5 | 65 | 883 | -- | 5 | 98 | -- | -- | -- | 88 | -- | 1,338 | 1,338 |
| Crawford | 1 | -- | 1 | 24 | -- | 3 | 5 | 26 | 11 | 14 | 41 | 49 | -- | 12 | 19 | -- | -- | -- | 14 | -- | 217 | 219 |
| Elk | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Greenwood | -- | -- | -- | 86 | -- | -- | 3 | 75 | 11 | 5 | 90 | 1,016 | -- | 5 | 81 | -- | -- | -- | 97 | -- | 1,470 | 1,470 |
| Labette | 3 | -- | 3 | 28 | -- | 6 | 8 | 38 | 25 | 22 | 7 | 26 | -- | 19 | 24 | -- | 4 | -- | 15 | -- | 222 | 225 |
| Linn | 4 | -- | 4 | 35 | -- | 25 | 4 | 9 | 21 | 152 | 10 | 4 | -- | 29 | 16 | -- | -- | -- | 2 | -- | 306 | 310 |
| Lyon | -- | -- | -- | 147 | -- | -- | 3 | 137 | 11 | 26 | 102 | 982 | -- | 5 | 213 | -- | -- | -- | 51 | -- | 1,676 | 1,676 |
| Marion | 1 | -- | 1 | 24 | -- | -- | 3 | 9 | 11 | 6 | 4 | 5 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 84 | 85 |
| Montgomery | 3 | -- | 3 | 319 | -- | -- | 38 | 259 | 83 | 7 | 55 | 4 | -- | 90 | 142 | -- | -- | -- | 2 | -- | 999 | 1,001 |
| Morris | -- | -- | -- | 24 | -- | -- | 3 | 261 | 11 | 17 | 4 | 4 | -- | 5 | 24 | -- | -- | -- | 2 | -- | 355 | 355 |
| Neosho | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 8 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 85 | 85 |
| Wilson | -- | -- | -- | 24 | -- | -- | 8 | 13 | 11 | 9 | 7 | 13 | -- | 5 | 21 | -- | -- | -- | 5 | -- | 115 | 115 |
| Woodson | -- | -- | -- | 98 | -- | -- | 3 | 83 | 11 | 7 | 41 | 872 | -- | 5 | 60 | -- | -- | -- | 38 | -- | 1,217 | 1,217 |
| Total | 16 | -- | 16 | 1,389 | 1 | 54 | 115 | 1,149 | 458 | 752 | 505 | 4,242 | -- | 247 | 1,350 | -- | 4 | 1 | 345 | 1 | 10,612 | 10,628 |
| **WEST** | | | | | | | | | | | | | | | | | | | | | | |
| Barton | 1 | -- | 1 | -- | -- | -- | -- | 0 | 1 | 7 | -- | 1 | -- | -- | 0 | -- | -- | -- | 0 | -- | 9 | 10 |
| Ellsworth | -- | -- | -- | -- | -- | -- | -- | -- | -- | 1 | -- | 1 | -- | -- | -- | -- | -- | -- | -- | -- | 2 | 2 |
| Harper | 1 | 1 | 1 | -- | -- | -- | -- | -- | 1 | 0 | -- | -- | -- | -- | 1 | -- | -- | -- | -- | -- | 3 | 4 |
| Harvey | 2 | -- | 2 | 24 | -- | -- | 3 | 9 | 12 | 7 | 4 | 5 | -- | 5 | 16 | 1 | -- | -- | 2 | 1 | 88 | 90 |
| Lincoln | -- | -- | -- | -- | -- | -- | -- | 4 | 4 | 4 | -- | -- | -- | -- | 76 | -- | -- | -- | -- | -- | 87 | 87 |
| McPherson | 14 | 1 | 15 | 26 | -- | -- | 3 | 18 | 16 | 27 | 4 | 15 | -- | 5 | 16 | -- | -- | -- | 3 | -- | 133 | 148 |
| Mitchell | 1 | -- | 1 | -- | -- | -- | -- | 5 | 6 | 5 | -- | 1 | -- | -- | 11 | -- | -- | -- | 3 | -- | 29 | 30 |
| Ottawa | -- | -- | -- | 24 | -- | -- | 3 | 58 | 25 | 15 | 4 | 76 | -- | 5 | 65 | -- | -- | -- | 2 | -- | 277 | 277 |
| Pawnee | 1 | -- | 1 | -- | -- | -- | -- | 0 | 1 | 7 | -- | 1 | -- | -- | 0 | -- | -- | -- | 1 | -- | 11 | 11 |
| Reno | 2 | -- | 2 | 0 | -- | -- | 0 | 0 | 0 | 2 | -- | 0 | -- | -- | 0 | -- | -- | -- | 0 | -- | 3 | 5 |
| Rice | 3 | -- | 3 | 0 | -- | -- | -- | 0 | 0 | 1 | 0 | 1 | -- | -- | 0 | -- | -- | -- | 0 | -- | 4 | 7 |
| Saline | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Sedgwick | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Stafford | 1 | -- | 1 | -- | -- | -- | -- | 0 | 1 | 8 | -- | 1 | -- | -- | 0 | -- | -- | -- | 1 | -- | 12 | 12 |
| Sumner | -- | -- | -- | 24 | -- | -- | 3 | 9 | 11 | 5 | 4 | 4 | -- | 5 | 16 | -- | -- | -- | 2 | -- | 82 | 82 |
| Total | 25 | 2 | 26 | 148 | -- | -- | 19 | 121 | 98 | 100 | 23 | 116 | -- | 29 | 232 | 1 | -- | -- | 16 | 1 | 905 | 931 |
| State total | 65 | 9 | 74 | 2,486 | 4 | 104 | 186 | 1,615 | 826 | 1,321 | 690 | 6,441 | 2 | 651 | 2,472 | 1 | 5 | 27 | 390 | 2 | 17,221 | 17,295 |

[1] International 1/4-inch rule.

Value of "0" indicates value greater than 0 but less than 500.

Rows and columns may not sum due to rounding.

Table 12.--Residues produced at primary wood-using mills by Forest Survey Unit, type of use, and type of material, Kansas, 1998
(*Thousands of tons, green weight*)

| Forest Survey Unit and type of use | Wood residues | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Total | | Coarse [1] | | Fine [2] | | Bark | |
| | Softwood | Hardwood | Softwood | Hardwood | Softwood | Hardwood | Softwood | Hardwood |
| **NORTHEAST** | | | | | | | | |
| Industrial fuel-mill | -- | 1.17 | -- | 0.74 | -- | 0.43 | -- | 0.30 |
| Domestic fuel | 0.02 | 0.98 | 0.02 | 0.91 | 0.00 | 0.07 | 0.00 | 0.34 |
| Miscellaneous [3] | 0.03 | 2.52 | 0.02 | 1.50 | 0.01 | 1.01 | 0.01 | 0.63 |
| Not used | 0.00 | 7.56 | 0.00 | 4.72 | 0.00 | 2.85 | 0.00 | 1.99 |
| Total | 0.05 | 12.22 | 0.03 | 7.86 | 0.01 | 4.36 | 0.01 | 3.25 |
| **SOUTHEAST** | | | | | | | | |
| Fiber products | -- | 7.10 | -- | 7.10 | -- | -- | -- | -- |
| Charcoal or Chemical | 0.01 | 0.13 | 0.01 | 0.13 | -- | -- | 0.00 | 0.06 |
| Industrial fuel-sold | -- | 0.16 | -- | 0.16 | -- | -- | -- | 0.07 |
| Domestic fuel | 0.01 | 2.08 | 0.01 | 2.07 | -- | 0.01 | 0.00 | 0.86 |
| Miscellaneous [3] | 0.01 | 22.36 | -- | 10.86 | 0.01 | 11.51 | -- | 7.48 |
| Not used | 0.01 | 0.44 | 0.01 | 0.13 | 0.00 | 0.31 | 0.00 | 0.05 |
| Total | 0.03 | 32.27 | 0.02 | 20.45 | 0.01 | 11.83 | 0.01 | 8.52 |
| **WEST** | | | | | | | | |
| Domestic fuel | 0.02 | 0.13 | 0.02 | 0.13 | -- | -- | 0.00 | 0.01 |
| Miscellaneous [3] | 0.02 | 0.46 | 0.01 | 0.28 | 0.01 | 0.18 | 0.00 | 0.12 |
| Not used | 0.01 | 0.39 | 0.00 | 0.29 | 0.00 | 0.11 | 0.01 | 0.17 |
| Total | 0.05 | 0.99 | 0.04 | 0.70 | 0.01 | 0.29 | 0.01 | 0.30 |
| **STATE TOTAL** | | | | | | | | |
| Fiber products | -- | 7.10 | -- | 7.10 | -- | -- | -- | -- |
| Charcoal or Chemical | 0.01 | 0.13 | 0.01 | 0.13 | -- | -- | 0.00 | 0.06 |
| Industrial fuel-mill | -- | 1.17 | -- | 0.74 | -- | 0.43 | -- | 0.30 |
| Industrial fuel-sold | -- | 0.16 | -- | 0.16 | -- | -- | -- | 0.07 |
| Domestic fuel | 0.05 | 3.19 | 0.05 | 3.11 | 0.00 | 0.08 | 0.01 | 1.20 |
| Miscellaneous [3] | 0.05 | 25.34 | 0.02 | 12.64 | 0.03 | 12.70 | 0.01 | 8.23 |
| Not used | 0.02 | 8.39 | 0.01 | 5.13 | 0.01 | 3.26 | 0.01 | 2.21 |
| Total | 0.13 | 45.48 | 0.09 | 29.01 | 0.04 | 16.48 | 0.03 | 12.06 |

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.
[2] Not suitable for chipping such as sawdust, veneer clippings, etc.
[3] Livestock bedding, mulch, small dimension, and specialty items.
Value of "0" indicates value greater than 0 but less than 10 tons.
Rows and columns may not sum due to rounding.

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Reading, William H.; Atchison, Robert L. 2001. **Kansas timber industry—an assessment of timber product output and use, 1998.** Resour. Bull. NC-200. St. Paul, MN: U.S. Department of Agrticulture, Forest Service, North Central Research Station. 26 p.

Discusses recent Kansas forest industry trends; reports production and receipts of industrial roundwood by product, species, and county in 1998. Also reports on logging residue, on wood and bark residue generated at primary wood-using mills, and on disposition of mill residues.

KEY WORDS: Industrial roundwood, production residues, saw logs, veneer logs.

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